



## SEQUENCE LISTING

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Goichi HONDA  
Shuji MURAMATSU  
Yukiko NAGANO

<120> NF-K B Activating Gene

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CONFIDENTIAL

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Pro Pro Pro Tyr Ser Glu Tyr Pro Pro Phe Ser His Arg Tyr Gln Arg
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 agaaaccagt ggggttataat gtagaatgat gtgctttctg cccaagtgg aattcatctt 1805  
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 <212> PRT  
 <213> Homo sapiens

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 Asn Pro Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala Pro Ala Leu  
 35 40 45  
 Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val  
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 Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro  
 65 70 75 80  
 Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu  
 85 90 95  
 Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln  
 100 105 110  
 Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala  
 115 120 125  
 Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe  
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[illegible]

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1 5 10																		
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Leu Leu Asn Glu Glu Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro																		
15 20 25																		
cct act tca aac cca gca ccg cag att gtg cag gct gcg tct tca gca																		147
Pro Thr Ser Asn Pro Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala																		
30 35 40 45																		
cca gca ctt gaa act gac tct tcc cct cca cca tat agt agt att act																		195
Pro Ala Leu Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr																		
50 55 60																		
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Val Glu Val Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr																		
65 70 75																		
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Pro Val Pro Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp																		
80 85 90																		
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Glu Ala Glu Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu																		

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Thr Ser Gln Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe			
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Ser Asp Ala Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu			
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Ala Phe Phe Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser			
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Phe Cys Ile Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly			
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Phe Gly Leu Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp			
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Lys Val Arg Asn Met Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg			
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Tyr Phe Phe Leu Leu			
240			
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gacaaattag tgaagaaaag acggagtttc gaaattgaat ggcaggggtgg tttttgctta			898
caagccattt ctgttcattc tttaagtatc tatattttcat ttgttttgca catatgcata			958
tgtgcccatt taagatattt gcatatactt gatagaaacc ataaagttgt agcagttaag			1018
tccagtcaca tttggttaat cagtgtttga tataattgaa agagttgagt ggataaacag			1078
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taaccatgca taacttactt tctgcaatgt tttcttagaa atttgtgtcca gatagctttc			1378

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acatatcttg	aactgagata	tgcaaaaatac	tcattttcaa	gttatggaaa	tgtgtttgtg	1918
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catttccaaa	aaataaaatt	tattatgctt	tataacctct	tctgtatttt	ctaatttttt	2278
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<213> Homo sapiens
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Asn Pro Ala Pro Gln Ile Val Gln Ala Val Ser Ser Ala Pro Ala Leu
      35          40          45
Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val
  50          55          60
Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro
  65          70          75          80
Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu
          85          90          95

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Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln  
 100 105 110

Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala  
 115 120 125

Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe  
 130 135 140

Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile  
 145 150 155 160

Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu  
 165 170 175

Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr  
 180 185 190

Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu  
 195 200 205

Gly Leu Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg  
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Asn Met Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe  
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Leu Leu

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<220>  
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 <222> (13)..(738)

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 Leu Leu Asn Glu Glu Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro  
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cct act tca aac cca gca ccg cag att gtg cag gct gtg tct tca gca 147  
 Pro Thr Ser Asn Pro Ala Pro Gln Ile Val Gln Ala Val Ser Ser Ala  
 30 35 40 45

cca gca ctt gaa act gac tct tcc cct cca cca tat agt agt att act 195  
 Pro Ala Leu Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr  
 50 55 60

gtg gaa gta cct aca act tca gat aca gaa gtt tac ggt gag ttt tat 243  
Val Glu Val Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr  
65 70 75

ccc gtg cca cct ccc tat agc gtt gct acc tct ctt cct aca tac gat 291  
Pro Val Pro Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp  
80 85 90

gaa gct gag aag gct aaa gct gct gca atg gca gct gca gca gca gaa 339  
Glu Ala Glu Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu  
95 100 105

aca tct caa aga att cag gag gaa gag tgt cca cca aga gat gac ttc 387  
Thr Ser Gln Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe  
110 115 120 125

agt gat gca gac cag ctc aga gtg ggg aat gat ggc att ttc atg ctg 435  
Ser Asp Ala Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu  
130 135 140

gca ttt ttc atg gca ttt att ttc aac tgg ctt gga ttt tgt tta tcc 483  
Ala Phe Phe Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser  
145 150 155

ttc tgt atc acc aat acc ata gct gga agg tat ggt gct atc tgc gga 531  
Phe Cys Ile Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly  
160 165 170

ttt ggc ctt tcc ttg atc aaa tgg atc ctt att gtc agg ttt tct gat 579  
Phe Gly Leu Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp  
175 180 185

tat ttt act gga tat ttc aat gga cag tat tgg ctt tgg tgg ata ttt 627  
Tyr Phe Thr Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe  
190 195 200 205

ctt gta ctt ggc ctg ctc ctt ttc ttc aga gga ttt gtt aat tat cta 675  
Leu Val Leu Gly Leu Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu  
210 215 220

aaa gtc aga aac atg tct gaa agt atg gca gct gct cat aga aca agg 723  
Lys Val Arg Asn Met Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg  
225 230 235

tat ttc ttc tta ttg tagagactgc atcaaccoga cattcctttc ttataccaat 778  
Tyr Phe Phe Leu Leu  
240

gtgaaatttc cagatcatct gtaaacctac aactttaata gaagactact aataacagaa 838

gacaaattag tgaagaaaag acggagtttc gaaattgaat ggcagggtgg tttttgctta 898

caagccattt ctgttcattc tttaagtatc tatatttcat ttgttttgca catatgcata 958

tgtgccatt taagatatatt gcatatactt gatagaaacc ataaagttgt agcagtttaag 1018

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Leu	Pro	Pro	Gly	Asp	Arg	Gly	Cys	Arg	Asn	Gly	Gly	Gly	Arg	Gly	Pro
	50					55					60				
Ala	Ala	Thr	Thr	Ser	Ser	Thr	Gly	Val	Ala	Val	Gly	Ala	Glu	His	Gly
	65					70					75				80
Glu	Asp	Ser	Leu	Ser	Arg	Lys	Pro	Asp	Pro	Glu	Pro	Gly	Arg	Met	Asp
				85					90					95	
His	His	Gln	Pro	Gly	Thr	Gly	Arg	Tyr	Gln	Val	Leu	Leu	Asn	Glu	Glu
			100					105					110		
Asp	Asn	Ser	Glu	Ser	Ser	Ala	Ile	Glu	Gln	Pro	Pro	Thr	Ser	Asn	Pro
		115					120					125			
Ala	Pro	Gln	Ile	Val	Gln	Ala	Val	Ser	Ser	Ala	Pro	Ala	Leu	Glu	Thr
	130					135					140				
Asp	Ser	Ser	Pro	Pro	Pro	Tyr	Ser	Ser	Ile	Thr	Val	Glu	Val	Pro	Thr
145					150					155					160
Thr	Ser	Asp	Thr	Glu	Val	Tyr	Gly	Glu	Phe	Tyr	Pro	Val	Pro	Pro	Pro
				165					170					175	
Tyr	Ser	Val	Ala	Thr	Ser	Leu	Pro	Thr	Tyr	Asp	Glu	Ala	Glu	Lys	Ala
			180					185					190		
Lys	Ala	Ala	Ala	Met	Ala	Ala	Ala	Ala	Ala	Glu	Thr	Ser	Gln	Arg	Ile
		195					200					205			
Gln	Glu	Glu	Glu	Cys	Pro	Pro	Arg	Asp	Asp	Phe	Ser	Asp	Ala	Asp	Gln
	210					215					220				
Leu	Arg	Val	Gly	Asn	Asp	Gly	Ile	Phe	Met	Leu	Ala	Phe	Phe	Met	Ala
225					230					235					240
Phe	Ile	Phe	Asn	Trp	Leu	Gly	Phe	Cys	Leu	Ser	Phe	Cys	Ile	Thr	Asn
				245					250					255	
Thr	Ile	Ala	Gly	Arg	Tyr	Gly	Ala	Ile	Cys	Gly	Phe	Gly	Leu	Ser	Leu
			260					265					270		
Ile	Lys	Trp	Ile	Leu	Ile	Val	Arg	Phe	Ser	Asp	Tyr	Phe	Thr	Gly	Tyr
		275					280					285			
Phe	Asn	Gly	Gln	Tyr	Trp	Leu	Trp	Trp	Ile	Phe	Leu	Val	Leu	Gly	Leu
	290					295					300				
Leu	Leu	Phe	Phe	Arg	Gly	Phe	Val	Asn	Tyr	Leu	Lys	Val	Arg	Asn	Met
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Ser	Glu	Ser	Met	Ala	Ala	Ala	His	Arg	Thr	Arg	Tyr	Phe	Phe	Leu	Leu
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 Arg Arg Arg Ser Gln Arg Val Cys Ala Ser Gly Pro Ser Met Leu Asn  
 5 10 15

agc gcg cgc ggc gcc ccg gag ctt ctc cgc gga acc gcg acc aac gcg 154  
 Ser Ala Arg Gly Ala Pro Glu Leu Leu Arg Gly Thr Ala Thr Asn Ala  
 20 25 30

gag gtc tcg gcg gcc gct gcg gga gcc aca gga agt gaa gag ctt ccg 202  
 Glu Val Ser Ala Ala Ala Gly Ala Thr Gly Ser Glu Glu Leu Pro  
 35 40 45 50

ccg gga gac cgc ggc tgc agg aac gga ggc gga agg ggc cct gcg gcg 250  
 Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro Ala Ala  
 55 60 65

acg acg tcg tcg acg ggg gtg gcc gtg gga gct gag cac gga gaa gac 298  
 Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly Glu Asp  
 70 75 80

tcc ctc tct cgg aag ccg gat ccc gag ccg ggc agg atg gat cac cac 346  
 Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp His His  
 85 90 95

cag ccg ggg act ggg cgc tac cag gtg ctt ctt aat gaa gag gat aac 394  
 Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu Asp Asn  
 100 105 110

tca gaa tca tcg gct ata gag cag cca cct act tca aac cca gca ccg 442  
 Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser Asn Pro Ala Pro  
 115 120 125 130

cag att gtg cag gct gtg tct tca gca cca gca ctt gaa act gac tct 490  
 Gln Ile Val Gln Ala Val Ser Ser Ala Pro Ala Leu Glu Thr Asp Ser  
 135 140 145

tcc cct cca cca tat agt agt att act gtg gaa gta cct aca act tca 538  
 Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val Pro Thr Thr Ser  
 150 155 160

gat aca gaa gtt tac ggt gag ttt tat ccc gtg cca cct ccc tat agc 586  
 Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro Tyr Ser

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Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala Lys Ala			
180	185	190	
gct gca atg gca gct gca gca gca gaa aca tct caa aga att cag gag 682			
Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile Gln Glu			
195	200	205	210
gaa gag tgt cca cca aga gat gac ttc agt gat gca gac cag ctc aga 730			
Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln Leu Arg			
	215	220	225
gtg ggg aat gat ggc att ttc atg ctg gca ttt ttc atg gca ttt att 778			
Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala Phe Ile			
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Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn Thr Ile			
	245	250	255
gct gga agg tat ggt gct atc tgc gga ttt ggc ctt tcc ttg atc aaa 874			
Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu Ile Lys			
	260	265	270
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Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr Phe Asn			
275	280	285	290
gga cag tat tgg ctt tgg tgg ata ttt ctt gta ctt ggc ctg ctc ctt 970			
Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu Leu Leu			
	295	300	305
ttc ttc aga gga ttt gtt aat tat cta aaa gtc aga aac atg tct gaa 1018			
Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg Asn Met Ser Glu			
	310	315	320
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Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe Leu Leu			
	325	330	335
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 acagttttgt tttgct 2636

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 35 40 45  
 Leu Pro Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro  
 50 55 60

Ala Ala Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly  
65 70 75 80

Glu Asp Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp  
85 90 95

His His Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu  
100 105 110

Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser Asn Pro  
115 120 125

Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala Pro Ala Leu Glu Thr  
130 135 140

Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val Pro Thr  
145 150 155 160

Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro  
165 170 175

Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala  
180 185 190

Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile  
195 200 205

Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln  
210 215 220

Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala  
225 230 235 240

Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn  
245 250 255

Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu  
260 265 270

Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr  
275 280 285

Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu  
290 295 300

Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg Asn Met  
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<210> 20  
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<212> DNA  
<213> Homo sapiens





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195 200 205 210	
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Glu Glu Cys Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln Leu Arg	
215 220 225	
gtg ggg aat gat ggc att ttc atg ctg gca ttt ttc atg gca ttt att	778
Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala Phe Ile	
230 235 240	
ttc aac tgg ctt gga ttt tgt tta tcc ttc tgt atc acc aat acc ata	826
Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn Thr Ile	
245 250 255	
gct gga agg tat ggt gct atc tgc gga ttt ggc ctt tcc ttg atc aaa	874
Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu Ile Lys	
260 265 270	
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Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr Phe Asn	
275 280 285 290	
gga cag tat tgg ctt tgg tgg ata ttt ctt gta ctt ggc ctg ctc ctt	970
Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu Leu Leu	
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Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg Asn Met Ser Glu	
310 315 320	
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Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe Leu Leu	
325 330 335	
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<213> Homo sapiens
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          20                 25              30  
  
Ser Arg Ile Trp Pro Lys Lys Ala Ile Gln Glu Ser Asn Asp Thr Asn  
      35                    40             45  
  
Lys Gly Lys Val Asn Phe Lys Gly Ala Asp Met Asn Gly Leu Pro Thr  
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 cggcctccgc ggtgcctgcc ttcgctctca ggttgaggag ctcaagcttg ggaaa atg 178  
 Met  
 1  
 gtg tgc att cct tgt atc gtc att cca gtt ctg ctc tgg atc tac aaa 226  
 Val Cys Ile Pro Cys Ile Val Ile Pro Val Leu Leu Trp Ile Tyr Lys  
 5 10 15  
 aaa ttc ctg gag cca tat ata tac cct ctg gtt tcc ccc ttc gtt agt 274  
 Lys Phe Leu Glu Pro Tyr Ile Tyr Pro Leu Val Ser Pro Phe Val Ser  
 20 25 30  
 cgt ata tgg cct aag aaa gca ata caa gaa tcc aat gat aca aac aaa 322  
 Arg Ile Trp Pro Lys Lys Ala Ile Gln Glu Ser Asn Asp Thr Asn Lys  
 35 40 45  
 ggc aaa gta aac ttt aag ggt gca gac atg aat gga tta cca aca aaa 370  
 Gly Lys Val Asn Phe Lys Gly Ala Asp Met Asn Gly Leu Pro Thr Lys  
 50 55 60 65  
 gga cca aca gaa atc tgt gat aaa aag aaa gac taaagaaatt ttcctaaagg 423  
 Gly Pro Thr Glu Ile Cys Asp Lys Lys Lys Asp  
 70 75  
 accccatcat ttaaaaaatg gacctgataa tatgaagcat cttccttgta attgtctctg 483  
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 gatagggaaa agggggaaac ttctttgaaa aatgaaacat ctgttacatt aatgtctaata 1023

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1085

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<212> PRT  
<213> Homo sapiens

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Leu Trp Thr Ala Ile Thr Leu Phe Ile Phe Leu Val Cys Cys Gln Ile  
35 40 45  
Pro Leu Phe Gly Ile Met Ser Ser Asp Ser Ala Asp Pro Phe Tyr Trp  
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Leu Ser Gly Leu

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Met Ala Ile Lys Phe Leu Glu Val Ile Lys Pro Phe Cys Val Ile  
1 5 10 15  
ctg ccg gaa att cag aag cca gag agg aag att cag ttt aag gag aaa 157  
Leu Pro Glu Ile Gln Lys Pro Glu Arg Lys Ile Gln Phe Lys Glu Lys  
20 25 30  
gtg ctg tgg acc gct atc acc ctc ttt atc ttc tta gtg tgc tgc cag 205  
Val Leu Trp Thr Ala Ile Thr Leu Phe Ile Phe Leu Val Cys Cys Gln  
35 40 45  
att ccc ctg ttt ggg atc atg tct tca gat tca gct gac cct ttc tat 253  
Ile Pro Leu Phe Gly Ile Met Ser Ser Asp Ser Ala Asp Pro Phe Tyr

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Trp Met Arg Val Ile Leu Ala Ser Asn Arg Gly Thr Leu Met Glu His			
65	70	75	
tct ctc tct ggc ctt tagggagtc cctcttagga caggcactgc ccagcagcaa			356
Ser Leu Ser Gly Leu			
80			
gggcagcaga gttgggtgct aagatcctga ggagctcgag gtttcgagct ggctttagac			416
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tctcgttggg cttagagtct gcctgtttct gctagctccg tgtttagtcc acttgggtca			596
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gagacattgt ggtagctatc agacatggac agaaactgac ttagtgctca caagccccta			776
caccttctgg gctgaagatc acccagctgt gttcagaatt ttcttactgt gcttaggact			836
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tgaccccagc ttccagggga ctgtcactgt ggacgccaaa atggcataac tgagataagg			1556
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<210> 25
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<212> PRT
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20	25	30	
tgg acc gct atc acc ctc ttt atc ttc tta gtg tgc tgc cag att ccc			260
Trp Thr Ala Ile Thr Leu Phe Ile Phe Leu Val Cys Cys Gln Ile Pro			
35	40	45	
ctg ttt ggg atc atg tct tca gat tca gct gac ccg gtc cat gca gtt			308
Leu Phe Gly Ile Met Ser Ser Asp Ser Ala Asp Pro Val His Ala Val			
50	55	60	65
gta tac ata gtg ttc atg ctg ggc tcc tgt gca ttc ttc tcc aaa acg			356
Val Tyr Ile Val Phe Met Leu Gly Ser Cys Ala Phe Phe Ser Lys Thr			
70	75	80	
tgg att gag gtc tca ggt tcc tct gcc aaa gat gtt gca aag cag ctg			404
Trp Ile Glu Val Ser Gly Ser Ser Ala Lys Asp Val Ala Lys Gln Leu			
85	90	95	
aag gag cag cag atg gtg atg aga ggc cac cga gag acc tcc atg gtc			452
Lys Glu Gln Gln Met Val Met Arg Gly His Arg Glu Thr Ser Met Val			
100	105	110	
cat gaa ctc aac cgg tac atc ccc aca gcc gcg gcc ttt ggt ggg ctg			500
His Glu Leu Asn Arg Tyr Ile Pro Thr Ala Ala Ala Phe Gly Gly Leu			
115	120	125	
tgc atc ggg gcc ctc tgc gtc ctg gct gac ttc cta ggc gcc att ggg			548
Cys Ile Gly Ala Leu Ser Val Leu Ala Asp Phe Leu Gly Ala Ile Gly			
130	135	140	145
tct gga acc ggg atc ctg ctc gca gtc aca atc atc tac cag tac ttt			596
Ser Gly Thr Gly Ile Leu Leu Ala Val Thr Ile Ile Tyr Gln Tyr Phe			
150	155	160	
gag atc ttc gtt aag gag caa agc gag gtt ggc agc atg ggg gcc ctg			644
Glu Ile Phe Val Lys Glu Gln Ser Glu Val Gly Ser Met Gly Ala Leu			
165	170	175	
ctc ttc tgagcccgtc tcccggacag gttgaggaag ctgctccaga agcgcctcgg			700
Leu Phe			
aaggggagct ctcatcatgg cgcgtgctgc tgcggcatat ggacttttaa taatgttttt			760
gaatttcgta ttctttcatt ccactgtgta aagtgtaga cattttccaa tttaaaattt			820
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 <212> PRT  
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 Ser Ile Leu Leu Thr Tyr Val Tyr Phe Val Leu Ser Leu Gly Pro Arg  
 35 40 45  
 Ile Met Ala Asn Arg Lys Pro Phe Gln Leu Arg Gly Phe Met Ile Val  
 50 55 60  
 Tyr Asn Phe Ser Leu Val Ala Leu Ser Leu Tyr Ile Val Tyr Glu Phe  
 65 70 75 80  
 Leu Met Ser Gly Trp Leu Ser Thr Tyr Thr Trp Arg Cys Asp Pro Val  
 85 90 95  
 Asp Tyr Ser Asn Ser Pro Glu Ala Leu Arg Met Val Arg Val Ala Trp  
 100 105 110  
 Leu Phe Leu Phe Ser Lys Phe Ile Glu Leu Met Asp Thr Val Ile Phe  
 115 120 125

Ile Leu Arg Lys Lys Asp Gly Gln Val Thr Phe Leu His Val Phe His  
 130 135 140  
 His Ser Val Leu Pro Trp Ser Trp Trp Trp Gly Val Lys Ile Ala Pro  
 145 150 155 160  
 Gly Gly Met Gly Ser Phe His Ala Met Ile Asn Ser Ser Val His Val  
 165 170 175  
 Ile Met Tyr Leu Tyr Tyr Gly Leu Ser Ala Phe Gly Pro Val Ala Gln  
 180 185 190  
 Pro Tyr Leu Trp Trp Lys Lys His Met Thr Ala Ile Gln Leu Ile Gln  
 195 200 205  
 Phe Val Leu Val Ser Leu His Ile Ser Gln Tyr Tyr Phe Met Ser Ser  
 210 215 220  
 Cys Asn Tyr Gln Tyr Pro Val Ile Ile His Leu Ile Trp Met Tyr Gly  
 225 230 235 240  
 Thr Ile Phe Phe Met Leu Phe Ser Asn Phe Trp Tyr His Ser Tyr Thr  
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 atg gag gct gtt gtg aac ttg tac caa gag gtg atg aag cac gca gat 166  
 Met Glu Ala Val Val Asn Leu Tyr Gln Glu Val Met Lys His Ala Asp  
 1 5 10 15  
 ccc cgg atc cag ggc tac cct ctg atg ggg tcc ccc ttg cta atg acc 214  
 Pro Arg Ile Gln Gly Tyr Pro Leu Met Gly Ser Pro Leu Leu Met Thr  
 20 25 30  
 tcc att ctc ctg acc tac gtg tac ttc gtt ctc tca ctt ggg cct cgc 262  
 Ser Ile Leu Leu Thr Tyr Val Tyr Phe Val Leu Ser Leu Gly Pro Arg  
 35 40 45

atc atg gct aat cgg aag ccc ttc cag ctc cgt ggc ttc atg att gtc	310
Ile Met Ala Asn Arg Lys Pro Phe Gln Leu Arg Gly Phe Met Ile Val	
50 55 60	
tac aac ttc tca ctg gtg gca ctc tcc ctc tac att gtc tat gag ttc	358
Tyr Asn Phe Ser Leu Val Ala Leu Ser Leu Tyr Ile Val Tyr Glu Phe	
65 70 75 80	
ctg atg tcg ggc tgg ctg agc acc tat acc tgg cgc tgt gac cct gtg	406
Leu Met Ser Gly Trp Leu Ser Thr Tyr Thr Trp Arg Cys Asp Pro Val	
85 90 95	
gac tat tcc aac agc cct gag gca ctt agg atg gtt cgg gtg gcc tgg	454
Asp Tyr Ser Asn Ser Pro Glu Ala Leu Arg Met Val Arg Val Ala Trp	
100 105 110	
ctc ttc ctc ttc tcc aag ttc att gag ctg atg gac aca gtg atc ttt	502
Leu Phe Leu Phe Ser Lys Phe Ile Glu Leu Met Asp Thr Val Ile Phe	
115 120 125	
att ctc cga aag aaa gac ggg cag gtg acc ttc cta cat gtc ttc cat	550
Ile Leu Arg Lys Lys Asp Gly Gln Val Thr Phe Leu His Val Phe His	
130 135 140	
cac tct gtg ctt ccc tgg agc tgg tgg tgg ggg gta aag att gcc ccg	598
His Ser Val Leu Pro Trp Ser Trp Trp Trp Gly Val Lys Ile Ala Pro	
145 150 155 160	
gga gga atg ggc tct ttc cat gcc atg ata aac tct tcc gtg cat gtc	646
Gly Gly Met Gly Ser Phe His Ala Met Ile Asn Ser Ser Val His Val	
165 170 175	
ata atg tac ctg tac tac gga tta tct gcc ttt ggc cct gtg gca caa	694
Ile Met Tyr Leu Tyr Tyr Gly Leu Ser Ala Phe Gly Pro Val Ala Gln	
180 185 190	
ccc tac ctt tgg tgg aaa aag cac atg aca gcc att cag ctg atc cag	742
Pro Tyr Leu Trp Trp Lys Lys His Met Thr Ala Ile Gln Leu Ile Gln	
195 200 205	
ttt gtc ctg gtc tca ctg cac atc tcc cag tac tac ttt atg tcc agc	790
Phe Val Leu Val Ser Leu His Ile Ser Gln Tyr Tyr Phe Met Ser Ser	
210 215 220	
tgt aac tac cag tac cca gtc att att cac ctc atc tgg atg tat ggc	838
Cys Asn Tyr Gln Tyr Pro Val Ile Ile His Leu Ile Trp Met Tyr Gly	
225 230 235 240	
acc atc ttc ttc atg ctg ttc tcc aac ttc tgg tat cac tct tat acc	886
Thr Ile Phe Phe Met Leu Phe Ser Asn Phe Trp Tyr His Ser Tyr Thr	
245 250 255	
aag ggc aag cgg ctg ccc cgt gca ctt cag caa aat gga gct cca ggt	934
Lys Gly Lys Arg Leu Pro Arg Ala Leu Gln Gln Asn Gly Ala Pro Gly	
260 265 270	
att gcc aag gtc aag gcc aac tgagaagcat ggccagata ggcccccacc	985





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<210> 31  
<211> 118  
<212> PRT  
<213> Homo sapiens

<400> 31  
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Ser Val Val Thr Ile Ile Ile Cys Phe Thr Cys Ser Cys Cys Cys Leu  
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Tyr Lys Thr Cys Arg Arg Pro Arg Pro Val Val Thr Thr Thr Thr Ser  
35 40 45  
Thr Thr Val Val His Ala Pro Tyr Pro Gln Pro Pro Ser Val Pro Pro  
50 55 60  
Ser Tyr Pro Gly Pro Ser Tyr Gln Gly Tyr His Thr Met Pro Pro Gln  
65 70 75 80  
Pro Gly Met Pro Ala Ala Pro Tyr Pro Met Gln Tyr Pro Pro Pro Tyr

100-24390-25403

	85		90		95
Pro Ala Gln Pro Met Gly Pro Pro Ala Tyr His Glu Thr Leu Ala Gly					
	100		105		110
Glu Cys Pro Cys Gln Leu					
	115				
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<212> DNA					
<213> Homo sapiens					
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<221> CDS					
<222> (91)..(444)					
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ggaggcctct ggtgaaggc agaggctaac atg ggg ttc gga gcg acc ttg gcc	114				
	Met Gly Phe Gly Ala Thr Leu Ala				
	1			5	
ggt ggc ctg acc atc ttt gtg ctg tct gtc gtc act atc atc atc tgc	162				
Val Gly Leu Thr Ile Phe Val Leu Ser Val Val Thr Ile Ile Ile Cys					
	10		15	20	
ttc acc tgc tcc tgc tgc tgc ctt tac aag acg tgc cgc cga cca cgt	210				
Phe Thr Cys Ser Cys Cys Cys Leu Tyr Lys Thr Cys Arg Arg Pro Arg					
	25		30	35	40
ccg gtt gtc acc acc acc aca tcc acc act gtg gtg cat gcc cct tat	258				
Pro Val Val Thr Thr Thr Thr Ser Thr Thr Val Val His Ala Pro Tyr					
		45		50	55
cct cag cct cca agt gtg ccg ccc agc tac cct gga cca agc tac cag	306				
Pro Gln Pro Pro Ser Val Pro Pro Ser Tyr Pro Gly Pro Ser Tyr Gln					
		60		65	70
ggc tac cac acc atg ccg cct cag cca ggg atg cca gca gca ccc tac	354				
Gly Tyr His Thr Met Pro Pro Gln Pro Gly Met Pro Ala Ala Pro Tyr					
		75		80	85
cca atg cag tac cca cca cct tac cca gcc cag ccc atg ggc cca ccg	402				
Pro Met Gln Tyr Pro Pro Pro Tyr Pro Ala Gln Pro Met Gly Pro Pro					
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gcc tac cac gag acc ctg gct ggt gag tgc ccc tgc caa ctc	444				
Ala Tyr His Glu Thr Leu Ala Gly Glu Cys Pro Cys Gln Leu					
	105		110	115	
tagccctgcc cgacttcccg agtctctgcc agcatccctc gggcacccat cccaaactac	504				
atcaactcaac aggcctctgc cctttctgc ttgcctgcc ctcacacggc agccaccat	564				

gctcacagcc	aaccagggtc	ctctctgctt	tcaggaggag	cagccgcgcc	ctaccccgcc	624
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cccctggggt	gtggagggaa	attggctcag	agatggacaa	cctggcaact	gtgagtcctt	1644
gcttcccgac	accagcctca	tggaatatgc	aacaactcct	gtaccccagt	ccacgggtgt	1704
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tggatggcag	ctctggccca	gacatgaata	cctcgtgttc	ctcctccctc	tattactgtt	1824
tcaccagagc	tgtcttagct	caaatctggt	gtgtttctga	gtctagggtc	tgtacacttg	1884
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<210> 33
<211> 168
<212> PRT
<213> Homo sapiens
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<400> 33
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Pro Pro Gly Asn Pro Val Tyr Pro Gln Thr Leu His Leu Pro Gln Ala

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Pro	Pro	Tyr 35	Thr	Asp	Ala	Pro	Pro	Ala	Tyr	Ser	Glu	Leu 45	Tyr	Arg	Pro			
Ser	Phe 50	Val	His	Pro	Gly	Ala 55	Ala	Thr	Val	Pro	Thr 60	Met	Ser	Ala	Ala			
Phe 65	Pro	Gly	Ala	Ser	Leu 70	Tyr	Leu	Pro	Met	Ala 75	Gln	Ser	Val	Ala	Val 80			
Gly	Pro	Leu	Gly	Ser 85	Thr	Ile	Pro	Met	Ala 90	Tyr	Tyr	Pro	Val	Gly 95	Pro			
Ile	Tyr	Pro	Pro 100	Gly	Ser	Thr	Val	Leu 105	Val	Glu	Gly	Gly	Tyr 110	Asp	Ala			
Gly	Ala	Arg 115	Phe	Gly	Ala	Gly	Ala 120	Thr	Ala	Gly	Asn	Ile 125	Pro	Pro	Pro			
Pro	Pro	Gly	Cys	Pro	Pro	Asn 135	Ala	Ala	Gln	Leu	Ala 140	Val	Met	Gln	Gly			
Ala 145	Asn	Val	Leu	Val	Thr 150	Gln	Arg	Lys	Gly	Asn 155	Phe	Phe	Met	Gly	Gly 160			
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<210> 34
<211> 1897
<212> DNA
<213> Homo sapiens
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<220>  
<221> CDS  
<222> (70) .. (573)
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<400> 34
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Met Asn Ser Lys Gly Gln Tyr Pro Thr Gln Pro Thr Tyr Pro
      1              5              10

gtg cag cct cct ggg aat cca gta tac cct cag acc ttg cat ctt cct 159
Val Gln Pro Pro Gly Asn Pro Val Tyr Pro Gln Thr Leu His Leu Pro
      15              20              25              30

cag gct cca ccc tat acc gat gct cca cct gcc tac tca gag ctc tat 207
Gln Ala Pro Pro Tyr Thr Asp Ala Pro Pro Ala Tyr Ser Glu Leu Tyr
      35              40              45

cgt ccg agc ttt gtg cac cca ggg gct gcc aca gtc ccc acc atg tca 255
Arg Pro Ser Phe Val His Pro Gly Ala Ala Thr Val Pro Thr Met Ser
      50              55              60

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gcc gca ttt cct gga gcc tct ctg tat ctt ccc atg gcc cag tct gtc	303
Ala Ala Phe Pro Gly Ala Ser Leu Tyr Leu Pro Met Ala Gln Ser Val	
65 70 75	
gct gtt ggg cct tta ggt tcc aca atc ccc atg gct tat tat cca gtc	351
Ala Val Gly Pro Leu Gly Ser Thr Ile Pro Met Ala Tyr Tyr Pro Val	
80 85 90	
ggt ccc atc tat cca cct ggc tcc aca gtg ctg gtg gaa gga ggg tat	399
Gly Pro Ile Tyr Pro Pro Gly Ser Thr Val Leu Val Glu Gly Gly Tyr	
95 100 105 110	
gat gca ggt gcc aga ttt gga gct ggg gct act gct ggc aac att cct	447
Asp Ala Gly Ala Arg Phe Gly Ala Gly Ala Thr Ala Gly Asn Ile Pro	
115 120 125	
cct cca cct cct gga tgc cct ccc aat gct gct cag ctt gca gtc atg	495
Pro Pro Pro Pro Gly Cys Pro Pro Asn Ala Ala Gln Leu Ala Val Met	
130 135 140	
cag gga gcc aac gtc ctc gta act cag cgg aag ggg aac ttc ttc atg	543
Gln Gly Ala Asn Val Leu Val Thr Gln Arg Lys Gly Asn Phe Phe Met	
145 150 155	
ggt ggt tca gat ggt ggc tac acc atc tgg tgaggaacca aggccacctc	593
Gly Gly Ser Asp Gly Gly Tyr Thr Ile Trp	
160 165	
tgtgccggga aagacatcac ataccttcag cactttctcac aatgtaactg ctttagtcat	653
attaacctga agttgcagtt tagacacatg ttgttgggggt gtctttcttg tgcccaaact	713
ttcaggcact tttcaaattt aataaggaac catgtaatgg tagcagtacc tccctaaagc	773
attttgaggt aggggaggta tccattcata aaatgaatgt ggggtgaagcc gccctaagga	833
ttttccttta atttctcttg agtaatactg taccatactg gtctttgctt ttagtaataa	893
aacatcaaat taggtttgga gggaactttg atcttctctaa gaattaaagt tgccaaatta	953
ttctgattgg tctttaatct cctttaagtc tttgatatat attacttggt ataaatggaa	1013
cgcattagtt gtctgccttt tcctttccat cccttgcccc acccatccca tctccaaccc	1073
tagtcttcca tttcctcccg ccagtctcca ttgaatcaat ggtgcaggac agaaagccag	1133
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tcacaaggat cctctgaaac cctctctgtg cccaagtac agatgccatt acttctgctt	1253
togtatctcc tcaggcaaaa gtggaggggt ccttatgggc cctcctcata ggttgtctct	1313
gcatacacga acctaaccca aatttgcttt ggtgccagaa aaactgagct atgtttgaac	1373
aaagatgtcg tgcaaaactgt actgtgaaca acagttgggt taaaatatga ggggcaagga	1433

ggaggatgca ttccaagaac ttgattgatg tgttcagagc taaattaaga ggagttttca 1493  
 gatcaaaaac tggttaccat tttttgtcag agtgtctgat gcggccactc attcgggtcc 1553  
 ccagaattcc tagactgggt taatagggtc atattgtgaa tgtctcacta caaaatgact 1613  
 tgagtccagt gaaatctcat tagggtttaa gaatatttca gggatcctta atgttttgat 1673  
 ttttgttttc tgaaattgga ttttatttta ttttatctta taatttcagt tcatctaaat 1733  
 tgtgtgttct gtacatgtga tgtttgactg taccattgac tgttatggaa gttcagcggt 1793  
 gtatgtctct ctctacactg tgggtgcactt aacttgtgga atttttatac taaaaatgta 1853  
 gaataaagac ttttttgaag atttgaataa agtgatgaag ttgc 1897

<210> 35  
 <211> 455  
 <212> PRT  
 <213> Homo sapiens

<400> 35  
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 Phe Phe Gly Phe Gly Trp Leu Phe Phe Met Arg Gln Leu Phe Lys Asp  
 20 25 30  
 Tyr Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser Val Thr Phe  
 35 40 45  
 Ala Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe Glu Ile Leu Gly  
 50 55 60  
 Val Leu Asn Ser Ser Ser Arg Tyr Phe His Trp Lys Met Asn Leu Cys  
 65 70 75 80  
 Val Ile Leu Leu Ile Leu Val Phe Met Val Pro Phe Tyr Ile Gly Tyr  
 85 90 95  
 Phe Ile Val Ser Asn Ile Arg Leu Leu His Lys Gln Arg Leu Leu Phe  
 100 105 110  
 Ser Cys Leu Leu Trp Leu Thr Phe Met Tyr Phe Phe Trp Lys Leu Gly  
 115 120 125  
 Asp Pro Phe Pro Ile Leu Ser Pro Lys His Gly Ile Leu Ser Ile Glu  
 130 135 140  
 Gln Leu Ile Ser Arg Val Gly Val Ile Gly Val Thr Leu Met Ala Leu  
 145 150 155 160  
 Leu Ser Gly Phe Gly Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr  
 165 170 175  
 Phe Leu Arg Asn Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg

180										185					190						
Leu	Leu	Gln	Thr	Met	Asp	Met	Ile	Ile	Ser	Lys	Lys	Lys	Arg	Met	Ala						
		195					200					205									
Met	Ala	Arg	Arg	Thr	Met	Phe	Gln	Lys	Gly	Glu	Val	His	Asn	Lys	Pro						
	210					215					220										
Ser	Gly	Phe	Trp	Gly	Met	Ile	Lys	Ser	Val	Thr	Thr	Ser	Ala	Ser	Gly						
225					230					235					240						
Ser	Glu	Asn	Leu	Thr	Leu	Ile	Gln	Gln	Glu	Val	Asp	Ala	Leu	Glu	Glu						
				245					250					255							
Leu	Ser	Arg	Gln	Leu	Phe	Leu	Glu	Thr	Ala	Asp	Leu	Tyr	Ala	Thr	Lys						
			260					265					270								
Glu	Arg	Ile	Glu	Tyr	Ser	Lys	Thr	Phe	Lys	Gly	Lys	Tyr	Phe	Asn	Phe						
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Leu	Gly	Tyr	Phe	Phe	Ser	Ile	Tyr	Cys	Val	Trp	Lys	Ile	Phe	Met	Ala						
	290					295					300										
Thr	Ile	Asn	Ile	Val	Phe	Asp	Arg	Val	Gly	Lys	Thr	Asp	Pro	Val	Thr						
305					310					315					320						
Arg	Gly	Ile	Glu	Ile	Thr	Val	Asn	Tyr	Leu	Gly	Ile	Gln	Phe	Asp	Val						
				325					330					335							
Lys	Phe	Trp	Ser	Gln	His	Ile	Ser	Phe	Ile	Leu	Val	Gly	Ile	Ile	Ile						
			340					345					350								
Val	Thr	Ser	Ile	Arg	Gly	Leu	Leu	Ile	Thr	Leu	Thr	Lys	Phe	Phe	Tyr						
		355					360					365									
Ala	Ile	Ser	Ser	Ser	Lys	Ser	Ser	Asn	Val	Ile	Val	Leu	Leu	Leu	Ala						
	370					375					380										
Gln	Ile	Met	Gly	Met	Tyr	Phe	Val	Ser	Ser	Val	Leu	Leu	Ile	Arg	Met						
385					390					395				400							
Ser	Met	Pro	Leu	Glu	Tyr	Arg	Thr	Ile	Ile	Thr	Glu	Val	Leu	Gly	Glu						
				405					410					415							
Leu	Gln	Phe	Asn	Phe	Tyr	His	Arg	Trp	Phe	Asp	Val	Ile	Phe	Leu	Val						
			420					425					430								
Ser	Ala	Leu	Ser	Ser	Ile	Leu	Phe	Leu	Tyr	Leu	Ala	His	Lys	Gln	Ala						
		435					440					445									
Pro	Glu	Lys	Gln	Met	Ala	Pro															
	450					455															

<210> 36  
 <211> 1903  
 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (116)..(1480)

<400> 36

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tgctgtggcc tcggggagtg ggaagtggag gcaggagcct tccttacact tcgcc atg 118  
Met  
1

agt ttc ctc atc gac tcc agc atc atg att acc tcc cag ata cta ttt 166  
Ser Phe Leu Ile Asp Ser Ser Ile Met Ile Thr Ser Gln Ile Leu Phe  
5 10 15

ttt gga ttt ggg tgg ctt ttc ttc atg cgc caa ttg ttt aaa gac tat 214  
Phe Gly Phe Gly Trp Leu Phe Phe Met Arg Gln Leu Phe Lys Asp Tyr  
20 25 30

gag ata cgt cag tat gtt gta cag gtg atc ttc tcc gtg acg ttt gca 262  
Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser Val Thr Phe Ala  
35 40 45

ttt tct tgc acc atg ttt gag ctc atc atc ttt gaa atc tta gga gta 310  
Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe Glu Ile Leu Gly Val  
50 55 60 65

ttg aat agc agc tcc cgt tat ttt cac tgg aaa atg aac ctg tgt gta 358  
Leu Asn Ser Ser Ser Arg Tyr Phe His Trp Lys Met Asn Leu Cys Val  
70 75 80

att ctg ctg atc ctg gtt ttc atg gtg cct ttt tac att ggc tat ttt 406  
Ile Leu Leu Ile Leu Val Phe Met Val Pro Phe Tyr Ile Gly Tyr Phe  
85 90 95

att gtg agc aat atc cga cta ctg cat aaa caa cga ctg ctt ttt tcc 454  
Ile Val Ser Asn Ile Arg Leu Leu His Lys Gln Arg Leu Leu Phe Ser  
100 105 110

tgt ctc tta tgg ctg acc ttt atg tat ttc ttc tgg aaa cta gga gat 502  
Cys Leu Leu Trp Leu Thr Phe Met Tyr Phe Phe Trp Lys Leu Gly Asp  
115 120 125

ccc ttt ccc att ctc agc cca aaa cat ggg atc tta tcc ata gaa cag 550  
Pro Phe Pro Ile Leu Ser Pro Lys His Gly Ile Leu Ser Ile Glu Gln  
130 135 140 145

ctc atc agc cgg gtt ggt gtg att gga gtg act ctc atg gct ctt ctt 598  
Leu Ile Ser Arg Val Gly Val Ile Gly Val Thr Leu Met Ala Leu Leu  
150 155 160

tct gga ttt ggt gct gtc aac tgc cca tac act tac atg tct tac ttc 646  
Ser Gly Phe Gly Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr Phe  
165 170 175

ctc agg aat gtg act gac acg gat att cta gcc ctg gaa cgg cga ctg	694
Leu Arg Asn Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg Leu	
180 185 190	
ctg caa acc atg gat atg atc ata agc aaa aag aaa agg atg gca atg	742
Leu Gln Thr Met Asp Met Ile Ile Ser Lys Lys Lys Arg Met Ala Met	
195 200 205	
gca cgg aga aca atg ttc cag aag ggg gaa gtg cat aac aaa cca tca	790
Ala Arg Arg Thr Met Phe Gln Lys Gly Glu Val His Asn Lys Pro Ser	
210 215 220 225	
ggg ttc tgg gga atg ata aaa agt gtt acc act tca gca tca gga agt	838
Gly Phe Trp Gly Met Ile Lys Ser Val Thr Thr Ser Ala Ser Gly Ser	
230 235 240	
gaa aat ctt act ctt att caa cag gaa gtg gat gct ttg gaa gaa tta	886
Glu Asn Leu Thr Leu Ile Gln Gln Glu Val Asp Ala Leu Glu Glu Leu	
245 250 255	
agc agg cag ctt ttt ctg gaa aca gct gat cta tat gct acc aag gag	934
Ser Arg Gln Leu Phe Leu Glu Thr Ala Asp Leu Tyr Ala Thr Lys Glu	
260 265 270	
aga ata gaa tac tcc aaa acc ttc aag ggg aaa tat ttt aat ttt ctt	982
Arg Ile Glu Tyr Ser Lys Thr Phe Lys Gly Lys Tyr Phe Asn Phe Leu	
275 280 285	
ggg tac ttt ttc tct att tac tgt gtt tgg aaa att ttc atg gct acc	1030
Gly Tyr Phe Phe Ser Ile Tyr Cys Val Trp Lys Ile Phe Met Ala Thr	
290 295 300 305	
atc aat att gtt ttt gat cga gtt ggg aaa acg gat cct gtc aca aga	1078
Ile Asn Ile Val Phe Asp Arg Val Gly Lys Thr Asp Pro Val Thr Arg	
310 315 320	
ggc att gag atc act gtg aat tat ctg gga atc caa ttt gat gtg aag	1126
Gly Ile Glu Ile Thr Val Asn Tyr Leu Gly Ile Gln Phe Asp Val Lys	
325 330 335	
ttt tgg tcc caa cac att tcc ttc att ctt gtt gga ata atc atc gtc	1174
Phe Trp Ser Gln His Ile Ser Phe Ile Leu Val Gly Ile Ile Ile Val	
340 345 350	
aca tcc atc aga gga ttg ctg atc act ctt acc aag ttc ttt tat gcc	1222
Thr Ser Ile Arg Gly Leu Leu Ile Thr Leu Thr Lys Phe Phe Tyr Ala	
355 360 365	
atc tct agc agt aag tcc tcc aat gtc att gtc ctg cta tta gca cag	1270
Ile Ser Ser Ser Lys Ser Ser Asn Val Ile Val Leu Leu Leu Ala Gln	
370 375 380 385	
ata atg ggc atg tac ttt gtc tcc tct gtg ctg ctg atc cga atg agt	1318
Ile Met Gly Met Tyr Phe Val Ser Ser Val Leu Leu Ile Arg Met Ser	
390 395 400	
atg cct tta gaa tac cgc acc ata atc act gaa gtc ctt gga gaa ctg	1366

Met Pro Leu Glu Tyr Arg Thr Ile Ile Thr Glu Val Leu Gly Glu Leu  
405 410 415

cag ttc aac ttc tat cac cgt tgg ttt gat gtg atc ttc ctg gtc agc 1414  
Gln Phe Asn Phe Tyr His Arg Trp Phe Asp Val Ile Phe Leu Val Ser  
420 425 430

gct ctc tct agc ata ctc ttc ctc tat ttg gct cac aaa cag gca cca 1462  
Ala Leu Ser Ser Ile Leu Phe Leu Tyr Leu Ala His Lys Gln Ala Pro  
435 440 445

gag aag caa atg gca cct tgaacttaag cctactacag actgtagag 1510  
Glu Lys Gln Met Ala Pro  
450 455

gccagtgggtt tcaaaattta gatataagag gggggaaaaa tggaaccagg gcctgacatt 1570

ttataaaciaa acaaaatgct atggtagcat ttttcacctt catagcatac tccttccccg 1630

tcaggtgata ctatgaccat gagtagcatc agccagaaca tgagagggag aactaactca 1690

agacaatact cagcagagag catcccggtg ggatatgagg ctggtgtaga ggcggagagg 1750

agccaagaaa ctaaagggtga aaaatacact ggaactctgg ggcaagacat gtctatggta 1810

gctgagccaa acacgtagga tttccgtttt aaggttcaca tggaagagggt tatagctttg 1870

ccttgagatt gactcattaa aatcagagac tgt 1903

<210> 37  
<211> 322  
<212> PRT  
<213> Homo sapiens

<400> 37  
Met Ser Ser Leu Gly Gly Gly Ser Gln Asp Ala Gly Gly Ser Ser Ser  
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20 25 30

Gly Ala Ala Asp Lys Ser Ala Val Val Ala Ala Ala Ala Pro Ala Ser  
35 40 45

Val Ala Asp Asp Thr Pro Pro Pro Glu Arg Arg Asn Lys Ser Gly Ile  
50 55 60

Ile Ser Glu Pro Leu Asn Lys Ser Leu Arg Arg Ser Arg Pro Leu Ser  
65 70 75 80

His Tyr Ser Ser Phe Gly Ser Ser Gly Gly Ser Gly Gly Gly Ser Met  
85 90 95

Met Gly Gly Glu Ser Ala Asp Lys Ala Thr Ala Ala Ala Ala Ala Ala  
100 105 110

104-10300-0303-0002

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<210> 38
<211> 1448
<212> DNA
<213> Homo sapiens
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<220>  
<221> CDS  
<222> (292)..(1257)
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<400> 38  
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ccctgccccg cccctcccc teggcctcgc ggcgacggcg gcggtggcgg cttggacgac 120
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<210> 39
<211> 313
<212> PRT
<213> Homo sapiens
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<400> 39  
Met Ala Gly Gln Pro Gly His Met Pro His Gly Gly Ser Ser Asn Asn  
1 5 10 15  
Leu Cys His Thr Leu Gly Pro Val His Pro Pro Asp Pro Gln Arg His  
20 25 30  
Pro Asn Thr Leu Ser Phe Arg Cys Ser Leu Ala Asp Phe Gln Ile Glu  
35 40 45  
Lys Lys Ile Gly Arg Gly Gln Phe Ser Glu Val Tyr Lys Ala Thr Cys  
50 55 60

Leu 65	Leu	Asp	Arg	Lys	Thr 70	Val	Ala	Leu	Lys	Lys 75	Val	Gln	Ile	Phe	Glu 80
Met	Met	Asp	Ala	Lys 85	Ala	Arg	Gln	Asp	Cys 90	Val	Lys	Glu	Ile	Gly 95	Leu
Leu	Lys	Gln	Leu 100	Asn	His	Pro	Asn	Ile 105	Ile	Lys	Tyr	Leu	Asp 110	Ser	Phe
Ile	Glu	Asp 115	Asn	Glu	Leu	Asn	Ile 120	Val	Leu	Glu	Leu	Ala 125	Asp	Ala	Gly
Asp 130	Leu	Ser	Gln	Met	Ile 135	Lys	Tyr	Phe	Lys	Lys 140	Gln	Lys	Arg	Leu	Ile
Pro 145	Glu	Arg	Thr	Val 150	Trp	Lys	Tyr	Phe	Val	Gln 155	Leu	Cys	Ser	Ala	Val 160
Glu	His	Met	His 165	Ser	Arg	Arg	Val	Met 170	His	Arg	Asp	Ile	Lys 175	Pro	Ala
Asn	Val	Phe 180	Ile	Thr	Ala	Thr	Gly 185	Val	Val	Lys	Leu	Gly 190	Asp	Leu	Gly
Leu	Gly 195	Arg	Phe	Phe	Ser	Ser	Glu 200	Thr	Thr	Ala	Ala 205	His	Ser	Leu	Val
Gly 210	Thr	Pro	Tyr	Tyr	Met 215	Ser	Pro	Glu	Arg	Ile 220	His	Glu	Asn	Gly	Tyr
Asn 225	Phe	Lys	Ser	Asp 230	Ile	Trp	Ser	Leu	Gly	Cys 235	Leu	Leu	Tyr	Glu	Met 240
Ala	Ala	Leu	Gln 245	Ser	Pro	Phe	Tyr	Gly	Asp 250	Lys	Met	Asn	Leu	Phe 255	Ser
Leu	Cys	Gln	Lys 260	Ile	Glu	Gln	Cys	Asp 265	Tyr	Pro	Pro	Leu	Pro 270	Gly	Glu
His	Tyr 275	Ser	Glu	Lys	Leu	Arg	Glu 280	Leu	Val	Ser	Met 285	Cys	Ile	Cys	Pro
Asp 290	Pro	His	Gln	Arg	Pro	Asp 295	Ile	Gly	Tyr	Val	His 300	Gln	Val	Ala	Lys
Gln 305	Met	His	Ile	Trp 310	Met	Ser	Ser	Thr							

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<210> 40
<211> 1597
<212> DNA
<213> Homo sapiens
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<220>  
<221> CDS

<222> (153)..(1091)

<400> 40

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ggcggaaccg agctgacggg cgtgcgggccg ctgcgccgca aactcgtgtg ggacgcaccg 60

ctccagccgc ccgcggggcca gcgcaccggt cccccagcgg cagccgagcc cgcccgcgcg 120

ccgttcgtgc cctcgtgagg ctggcatgca gg atg gca gga cag ccc ggc cac 173
                               Met Ala Gly Gln Pro Gly His
                               1                               5

atg ccc cat gga ggg agt tcc aac aac ctc tgc cac acc ctg ggg cct 221
Met Pro His Gly Gly Ser Ser Asn Asn Leu Cys His Thr Leu Gly Pro
          10                               15                               20

gtg cat cct cct gac cca cag agg cat ccc aac acg ctg tct ttt cgc 269
Val His Pro Pro Asp Pro Gln Arg His Pro Asn Thr Leu Ser Phe Arg
          25                               30                               35

tgc tcg ctg gcg gac ttc cag atc gaa aag aag ata ggc cga gga cag 317
Cys Ser Leu Ala Asp Phe Gln Ile Glu Lys Lys Ile Gly Arg Gly Gln
          40                               45                               50                               55

ttc agc gag gtg tac aag gcc acc tgc ctg ctg gac agg aag aca gtg 365
Phe Ser Glu Val Tyr Lys Ala Thr Cys Leu Leu Asp Arg Lys Thr Val
          60                               65                               70

gct ctg aag aag gtg cag atc ttt gag atg atg gac gcc aag gcg agg 413
Ala Leu Lys Lys Val Gln Ile Phe Glu Met Met Asp Ala Lys Ala Arg
          75                               80                               85

cag gac tgt gtc aag gag atc ggc ctc ttg aag caa ctg aac cac cca 461
Gln Asp Cys Val Lys Glu Ile Gly Leu Leu Lys Gln Leu Asn His Pro
          90                               95                               100

aat atc atc aag tat ttg gac tcg ttt atc gaa gac aac gag ctg aac 509
Asn Ile Ile Lys Tyr Leu Asp Ser Phe Ile Glu Asp Asn Glu Leu Asn
          105                               110                               115

att gtg ctg gag ttg gct gac gca ggg gac ctc tcg cag atg atc aag 557
Ile Val Leu Glu Leu Ala Asp Ala Gly Asp Leu Ser Gln Met Ile Lys
          120                               125                               130                               135

tac ttt aag aag cag aag cgg ctc atc ccg gag agg aca gta tgg aag 605
Tyr Phe Lys Lys Gln Lys Arg Leu Ile Pro Glu Arg Thr Val Trp Lys
          140                               145                               150

tac ttt gtg cag ctg tgc agc gcc gtg gag cac atg cat tca cgc cgg 653
Tyr Phe Val Gln Leu Cys Ser Ala Val Glu His Met His Ser Arg Arg
          155                               160                               165

gtg atg cac cga gac atc aag cct gcc aac gtg ttc atc aca gcc acg 701
Val Met His Arg Asp Ile Lys Pro Ala Asn Val Phe Ile Thr Ala Thr
          170                               175                               180

ggc gtc gtg aag ctc ggt gac ctt ggt ctg ggc cgc ttc ttc agc tct 749
Gly Val Val Lys Leu Gly Asp Leu Gly Leu Gly Arg Phe Phe Ser Ser

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185	190	195	
gag acc acc gca gcc cac tcc cta gtg ggg acg ccc tac tac atg tca			797
Glu Thr Thr Ala Ala His Ser Leu Val Gly Thr Pro Tyr Tyr Met Ser			
200	205	210	215
ccg gag agg atc cat gag aac ggc tac aac ttc aag tcc gac atc tgg			845
Pro Glu Arg Ile His Glu Asn Gly Tyr Asn Phe Lys Ser Asp Ile Trp			
	220	225	230
tcc ttg ggc tgt ctg ctg tac gag atg gca gcc ctc cag agc ccc ttc			893
Ser Leu Gly Cys Leu Leu Tyr Glu Met Ala Ala Leu Gln Ser Pro Phe			
	235	240	245
tat gga gat aag atg aat ctc ttc tcc ctg tgc cag aag atc gag cag			941
Tyr Gly Asp Lys Met Asn Leu Phe Ser Leu Cys Gln Lys Ile Glu Gln			
	250	255	260
tgt gac tac ccc cca ctc ccc ggg gag cac tac tcc gag aag tta cga			989
Cys Asp Tyr Pro Pro Leu Pro Gly Glu His Tyr Ser Glu Lys Leu Arg			
	265	270	275
gaa ctg gtc agc atg tgc atc tgc cct gac ccc cac cag aga cct gac			1037
Glu Leu Val Ser Met Cys Ile Cys Pro Asp Pro His Gln Arg Pro Asp			
280	285	290	295
atc gga tac gtg cac cag gtg gcc aag cag atg cac atc tgg atg tcc			1085
Ile Gly Tyr Val His Gln Val Ala Lys Gln Met His Ile Trp Met Ser			
	300	305	310
agc acc tgagcgtgga tgcaccgtgc cttatcaaag ccagcaccac tttgccttac			1141
Ser Thr			
ttgagtcgtc ttctotttoga gtggccacct ggtagcctag aacagctaag accacagggt			1201
tcagcagggt ccccaaaagg ctgcccagcc ttacagcaga tgctgaaggc agagcagctg			1261
agggaggggc gctggccaca tgctactgat ggtcagattc caaagtcctt tctttatact			1321
gttgtggaca atctcagctg ggtcaataag ggcagggtgt tcagcgagcc acggcagccc			1381
cctgtatctg gattgtaatg tgaatcttta gggtaatcc tccagtgacc tgtcaaggct			1441
tatgctaaca ggagacttgc aggagaccgt gtgatttgtg tagtgagcct ttgaaaatgg			1501
ttagtaccgg gttcagttta gttcttggtta tcttttcaat caagctgtgt gcttaattta			1561
ctctgttgta aagggataaa gtggaaatca tttttt			1597
<210> 41			
<211> 371			
<212> PRT			
<213> Homo sapiens			
<400> 41			
Met Ser His Glu Lys Ser Phe Leu Val Ser Gly Asp Asn Tyr Pro Pro			

1	5	10	15
Pro Asn Pro Gly Tyr Pro Gly Gly Pro Gln Pro Pro Met Pro Pro Tyr	20	25	30
Ala Gln Pro Pro Tyr Pro Gly Ala Pro Tyr Pro Gln Pro Pro Phe Gln	35	40	45
Pro Ser Pro Tyr Gly Gln Pro Gly Tyr Pro His Gly Pro Ser Pro Tyr	50	55	60
Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Gly Gly Tyr Pro	65	70	75
Gln Gly Pro Tyr Pro Gln Glu Gly Tyr Pro Gln Gly Pro Tyr Pro Gln	85	90	95
Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Ser Pro Phe Pro Pro Asn	100	105	110
Pro Tyr Gly Gln Pro Gln Val Phe Pro Gly Gln Asp Pro Asp Ser Pro	115	120	125
Gln His Gly Asn Tyr Gln Glu Glu Gly Pro Pro Ser Tyr Tyr Asp Asn	130	135	140
Gln Asp Phe Pro Ala Thr Asn Trp Asp Asp Lys Ser Ile Arg Gln Ala	145	150	155
Phe Ile Arg Lys Val Phe Leu Val Leu Thr Leu Gln Leu Ser Val Thr	165	170	175
Leu Ser Thr Val Ser Val Phe Thr Phe Val Ala Glu Val Lys Gly Phe	180	185	190
Val Arg Glu Asn Val Trp Thr Tyr Tyr Val Ser Tyr Ala Val Phe Phe	195	200	205
Ile Ser Leu Ile Val Leu Ser Cys Cys Gly Asp Phe Arg Arg Lys His	210	215	220
Pro Trp Asn Leu Val Ala Leu Ser Val Leu Thr Ala Ser Leu Ser Tyr	225	230	235
Met Val Gly Met Ile Ala Ser Phe Tyr Asn Thr Glu Ala Val Ile Met	245	250	255
Ala Val Gly Ile Thr Thr Ala Val Cys Phe Thr Val Val Ile Phe Ser	260	265	270
Met Gln Thr Arg Tyr Asp Phe Thr Ser Cys Met Gly Val Leu Leu Val	275	280	285
Ser Met Val Val Leu Phe Ile Phe Ala Ile Leu Cys Ile Phe Ile Arg	290	295	300
Asn Arg Ile Leu Glu Ile Val Tyr Ala Ser Leu Gly Ala Leu Leu Phe			

[illegible]

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<210> 42
<211> 1781
<212> DNA
<213> Homo sapiens
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<220> .
<221> CDS
<222> (91)..(1203)
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ccaccggggc ggaccgcgga acccgaggcc atg tcc cat gaa aag agt ttt ttg																	114
Met Ser His Glu Lys Ser Phe Leu																	
1 5																	
gtg tct ggg gac aac tat cct ccc ccc aac cct gga tat ccg ggg ggg																	162
Val Ser Gly Asp Asn Tyr Pro Pro Pro Asn Pro Gly Tyr Pro Gly Gly																	
10 15 20																	
ccc cag cca ccc atg ccc ccc tat gct cag cct ccc tac cct ggg gcc																	210
Pro Gln Pro Pro Met Pro Pro Tyr Ala Gln Pro Pro Tyr Pro Gly Ala																	
25 30 35 40																	
cct tac cca cag ccc cct ttc cag ccc tcc ccc tac ggt cag cca ggg																	258
Pro Tyr Pro Gln Pro Pro Phe Gln Pro Ser Pro Tyr Gly Gln Pro Gly																	
45 50 55																	
tac ccc cat ggc ccc agc ccc tac ccc caa ggg ggc tac cca cag ggt																	306
Tyr Pro His Gly Pro Ser Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly																	
60 65 70																	
ccc tac ccc caa ggg ggc tac cca cag ggc ccc tac cca caa gag ggc																	354
Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Glu Gly																	
75 80 85																	
tac cca cag ggc ccc tac ccc caa ggg ggc tac ccc cag ggg cca tat																	402
Tyr Pro Gln Gly Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr																	
90 95 100																	
ccc cag agc ccc ttc ccc ccc aac ccc tat gga cag cca cag gtc ttc																	450
Pro Gln Ser Pro Phe Pro Pro Asn Pro Tyr Gly Gln Pro Gln Val Phe																	

105	110										115					120					
cca gga caa gac cct gac tca ccc cag cat gga aac tac cag gag gag	Pro Gly Gln Asp Pro Asp Ser Pro Gln His Gly Asn Tyr Gln Glu Glu	498																			
125										130					135						
ggt ccc cca tcc tac tat gac aac cag gac ttc cct gcc acc aac tgg	Gly Pro Pro Ser Tyr Tyr Asp Asn Gln Asp Phe Pro Ala Thr Asn Trp	546																			
140										145					150						
gat gac aag agc atc cga cag gcc ttc atc cgc aag gtg ttc cta gtg	Asp Asp Lys Ser Ile Arg Gln Ala Phe Ile Arg Lys Val Phe Leu Val	594																			
155										160					165						
ctg acc ttg cag ctg tcg gtg acc ctg tcc acg gtg tct gtg ttc act	Leu Thr Leu Gln Leu Ser Val Thr Leu Ser Thr Val Ser Val Phe Thr	642																			
170										175					180						
ttt gtt gcg gag gtg aag ggc ttt gtc cgg gag aat gtc tgg acc tac	Phe Val Ala Glu Val Lys Gly Phe Val Arg Glu Asn Val Trp Thr Tyr	690																			
185										190					195					200	
tat gtc tcc tat gct gtc ttc ttc atc tct ctc atc gtc ctc agc tgt	Tyr Val Ser Tyr Ala Val Phe Phe Ile Ser Leu Ile Val Leu Ser Cys	738																			
205										210					215						
tgt ggg gac ttc cgg cga aag cac ccc tgg aac ctt gtt gca ctg tcg	Cys Gly Asp Phe Arg Arg Lys His Pro Trp Asn Leu Val Ala Leu Ser	786																			
220										225					230						
gtc ctg acc gcc agc ctg tcg tac atg gtg ggg atg atc gcc agc ttc	Val Leu Thr Ala Ser Leu Ser Tyr Met Val Val Gly Met Ile Ala Ser Phe	834																			
235										240					245						
tac aac acc gag gca gtc atc atg gcc gtg ggc atc acc aca gcc gtc	Tyr Asn Thr Glu Ala Val Ile Met Ala Val Gly Ile Thr Thr Ala Val	882																			
250										255					260						
tgc ttc acc gtc gtc atc ttc tcc atg cag acc cgc tac gac ttc acc	Cys Phe Thr Val Val Ile Phe Ser Met Gln Thr Arg Tyr Asp Phe Thr	930																			
265										270					275					280	
tca tgc atg ggc gtg ctc ctg gtg agc atg gtg gtg ctc ttc atc ttc	Ser Cys Met Gly Val Leu Leu Val Ser Met Val Val Leu Phe Ile Phe	978																			
285										290					295						
gcc att ctc tgc atc ttc atc cgg aac cgc atc ctg gag atc gtg tac	Ala Ile Leu Cys Ile Phe Ile Arg Asn Arg Ile Leu Glu Ile Val Tyr	1026																			
300										305					310						
gcc tca ctg ggc gct ctg ctc ttc acc tgc ttc ctc gca gtg gac acc	Ala Ser Leu Gly Ala Leu Leu Phe Thr Cys Phe Leu Ala Val Asp Thr	1074																			
315										320					325						
cag ctg ctg ctg ggg aac aag cag ctg tcc ctg agc cca gaa gag tat	Gln Leu Leu Leu Gly Asn Lys Gln Leu Ser Leu Ser Pro Glu Glu Tyr	1122																			
330										335					340						



tac atc ctc acc atc att ggc cgc gcc aag gag tagccgagct ccagctcgct 1223  
 Tyr Ile Leu Thr Ile Ile Gly Arg Ala Lys Glu  
 365 370

gtgcccgcgc	aggtggcacg	gctggcctgg	accctgcccc	tggcacggca	gtgccagctg	1283
tacttccccct	ctctcttgtc	cccaggcaca	gcctagggaa	aaggatgcct	ctctccaacc	1343
ctcctgtatg	tacactgcag	atacttccat	ttggaccocg	tgtggccaca	gcattggcccc	1403
tttagtcctc	ccgccccccg	caaggggcag	caaggccacg	tttcctgtcc	acctcctgtc	1463
tactcattgt	tgcattgagc	ctgtctgcc	gcccacccca	gggactgggg	gcagcaccag	1523
gtcccgggga	gagggattga	gccaagaggt	gagggtgac	gtcttccctc	ctgtcccagc	1583
tccccagcct	ggcgtagagc	acccctcccc	tccccccac	ccccctggag	tgtctgccctc	1643
tggggacatg	cggagtgggg	gtcttatccc	tgtgtctgagc	cctgagggca	gagaggatgg	1703
catgtttcag	gggaggggga	agccttccctc	tcaatttggt	gtcagtgaaa	ttccaataaa	1763
tgggattttgc	tctctgcc					1781

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<210> 43
<211> 393
<212> PRT
<213> Homo sapiens
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<400> 43																
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Ser	Ser	Pro	Pro	Pro	Lys	Thr	Glu	Ala	Ala	Ser	Asp	Pro	Gln	His	Pro	
			20					25					30			
Ala	Ala	Ser	Glu	Gly	Ala	Ala	Ala	Ala	Ala	Ala	Ser	Pro	Pro	Leu	Leu	
		35					40					45				
Arg	Cys	Leu	Val	Leu	Thr	Gly	Phe	Gly	Gly	Tyr	Asp	Lys	Val	Lys	Leu	
	50					55					60					
Gln	Ser	Arg	Pro	Ala	Ala	Pro	Pro	Ala	Pro	Gly	Pro	Gly	Gln	Leu	Thr	
65					70					75					80	
Leu	Arg	Leu	Arg	Ala	Cys	Gly	Leu	Asn	Phe	Ala	Asp	Leu	Met	Ala	Arg	
				85					90					95		
Gln	Gly	Leu	Tyr	Asp	Arg	Leu	Pro	Pro	Leu	Pro	Val	Thr	Pro	Gly	Met	
			100					105					110			

Glu Gly Ala Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg  
115 120 125

Lys Ala Gly Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln  
130 135 140

Glu Glu Val Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala  
145 150 155 160

Met Thr Phe Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala  
165 170 175

Tyr Met Val Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val  
180 185 190

Leu Val His Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu  
195 200 205

Cys Arg Thr Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser  
210 215 220

Lys His Glu Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr  
225 230 235 240

His Thr Thr Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly  
245 250 255

Val Asp Ile Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly  
260 265 270

Tyr Asn Leu Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala  
275 280 285

Asn Leu Leu Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr  
290 295 300

Trp Trp Asn Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn  
305 310 315 320

Arg Ala Val Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu  
325 330 335

Leu Val Ser Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly  
340 345 350

His Ile Lys Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala  
355 360 365

Asp Ala Met Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu  
370 375 380

Leu Val Pro Gly Pro Glu Lys Glu Asn  
385 390

<210> 44  
<211> 2396

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (50)..(1228)

<400> 44

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Met Ser Asp  
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gag aga gag gta gcc gag gca gcg acc ggg gaa gac gcc tct tcg ccg 106  
Glu Arg Glu Val Ala Glu Ala Ala Thr Gly Glu Asp Ala Ser Ser Pro  
5 10 15

cct ccg aaa acc gag gca gcg agc gac ccc cag cat ccc gcg gcc tcc 154  
Pro Pro Lys Thr Glu Ala Ala Ser Asp Pro Gln His Pro Ala Ala Ser  
20 25 30 35

gaa ggg gcc gcc gcc gcc gcc gcc tgc ccg cca ctg ctg cgc tgc cta 202  
Glu Gly Ala Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu Arg Cys Leu  
40 45 50

gtg ctc acc ggc ttt gga ggc tac gac aag gtg aag ctg cag agc ccg 250  
Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu Gln Ser Arg  
55 60 65

ccg gca gcg ccc ccg gcc cct ggg ccc ggc cag ctg acg ctg cgt ctg 298  
Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr Leu Arg Leu  
70 75 80

cgg gcc tgc ggg ctc aac ttc gca gac ctc atg gct agg cag ggg ctg 346  
Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg Gln Gly Leu  
85 90 95

tac gac cgt ctc ccg cct ctg cct gtc act ccg ggc atg gag ggc gcg 394  
Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met Glu Gly Ala  
100 105 110 115

ggt gtt gtg atc gca gtg ggc gag gga gtc agc gac cgc aag gca gga 442  
Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg Lys Ala Gly  
120 125 130

gac ccg gtg atg gtg ttg aac ccg tca ggg atg tgg cag gaa gag gtg 490  
Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln Glu Glu Val  
135 140 145

act gtg ccc tcg gtc cag acc ttc ctg att cct gag gcc atg acc ttt 538  
Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala Met Thr Phe  
150 155 160

gag gaa gct gct gcc ttg ctc gtc aat tac att aca gcc tac atg gtc 586  
Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala Tyr Met Val  
165 170 175

ctc ttt gac ttc ggc aac cta cag cct ggc cac agc gtc ttg gta cac 634

Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val Leu Val His	
180 185 190 195	
atg gct gca ggg ggt gtg ggt atg gct gcc gtg cag ctg tgc cgt aca	682
Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu Cys Arg Thr	
200 205 210	
gtg gag aat gtg aca gtg ttc gga acg gcc tcg gcc agc aag cac gag	730
Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser Lys His Glu	
215 220 225	
gca ctg aag gag aat ggg gtc aca cat ccc atc gac tat cac acg act	778
Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr His Thr Thr	
230 235 240	
gac tac gtg gat gag atc aag aag att tcc cct aaa gga gtg gac att	826
Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly Val Asp Ile	
245 250 255	
gtc atg gac cct ctg ggt ggg tca gat act gcc aag ggc tac aac ctc	874
Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly Tyr Asn Leu	
260 265 270 275	
ctg aaa ccc atg ggc aaa gtc gtc acc tat gga atg gcc aac ctg ctg	922
Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala Asn Leu Leu	
280 285 290	
acg ggc ccc aaa cgg aac ctg atg gcc ctg gcc cgg aca tgg tgg aat	970
Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr Trp Trp Asn	
295 300 305	
cag ttc agc gtg aca gct ctg cag ctg ctg cag gcc aac cgg gct gtg	1018
Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn Arg Ala Val	
310 315 320	
tgt ggc ttc cac ctg ggc tac ctg gat ggt gag gtg gag ctg gtc agt	1066
Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu Leu Val Ser	
325 330 335	
ggt gtg gtg gcc cgc ctc ctg gct ctg tac aac cag ggc cac atc aag	1114
Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly His Ile Lys	
340 345 350 355	
ccc cac att gac tca gtc tgg ccc ttc gag aag gtg gct gat gcc atg	1162
Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala Asp Ala Met	
360 365 370	
aaa cag atg cag gag aag aag aat gtg ggc aag gtc ctc ctg gtt cca	1210
Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu Leu Val Pro	
375 380 385	
ggg cca gag aag gag aac tagggcaagt ggctgtgaga ccctagagac	1258
Gly Pro Glu Lys Glu Asn	
390	
cagcgaaggg agaagttggg aagctacgtt ctgttgcca ccagacttgc atttcagcct	1318

ctgtcataat	gctctgccct	ccctcccccg	aagttctctg	tggtgatgac	cgctctcccc	1378
tgccccctcc	cgcttctga	cctctgaaga	ggttggaag	tgaccatttg	gatgtctggg	1438
ccctgccaaag	gcgacaggga	gggtcagagg	gaggccggct	gcttctctgcc	cccacccttt	1498
ccccgggcct	gctgtgctgc	ttttgtgcc	aggttagcca	gtccccctg	ttgtgttcca	1558
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30

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35

40

45

Arg Cys Leu Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu

50

55

60

Gln Ser Arg Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr

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75

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Leu Arg Leu Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg  
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Gln Gly Leu Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met  
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Glu Gly Ala Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg  
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Lys Ala Gly Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln  
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Glu Glu Val Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala  
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Met Thr Phe Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala  
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Tyr Met Val Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val  
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Cys Arg Thr Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser  
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Lys His Glu Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr  
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His Thr Thr Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly  
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Val Asp Ile Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly  
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Tyr Asn Leu Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala  
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Asn Leu Leu Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr  
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Trp Trp Asn Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn  
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Arg Ala Val Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu  
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Leu Val Ser Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly  
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His Ile Lys Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala  
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Asp Ala Met Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu  
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gac tac gtg gat gag atc aag aag att tcc cct aaa gga gtg gac att Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly Val Asp Ile 245 250 255			826
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ccc cac att gac tca gtc tgg ccc ttc gag aag gtg gct gat gcc atg Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala Asp Ala Met 360 365 370			1162
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390

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Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly Leu Ala Phe

35 40 45

Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe Gln Lys His Lys  
50 55 60

Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val Phe Val Val Leu Ile  
65 70 75 80

Gly Trp Pro Leu Ile Gly Met Ile Phe Glu Ile Tyr Gly Phe Phe Leu  
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Leu Phe Arg Gly Phe Phe Pro Val Val Val Gly Phe Ile Arg Arg Val  
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Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe Asp Lys Ala Leu Leu  
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gct att gga aat gtt tta ttt gta gcc ggc ttg gct ttt gta att ggt 262  
Ala Ile Gly Asn Val Leu Phe Val Ala Gly Leu Ala Phe Val Ile Gly  
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tta gaa aga aca ttc aga ttc ttc ttc caa aaa cat aaa atg aaa gct 310  
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aca ggt ttt ttt ctg ggt ggt gta ttt gta gtc ctt att ggt tgg cct 358  
Thr Gly Phe Phe Leu Gly Gly Val Phe Val Val Leu Ile Gly Trp Pro  
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Leu Ile Gly Met Ile Phe Glu Ile Tyr Gly Phe Phe Leu Leu Phe Arg	
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Gly Phe Phe Pro Val Val Val Gly Phe Ile Arg Arg Val Pro Val Leu	
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Gly Glu Ser Asn Asn Met Val	
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 Ser Leu Val Glu Leu Leu Ile Arg Pro Val Gln Arg Leu Pro Ser Val  
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Thr	His	Ile	Asn	Glu	Asp	Lys	Arg	Lys	Thr	Glu	Ala	Gln	Lys	Gln	Ile
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Phe	Asp	Val	Val	Tyr	Glu	Val	Asp	Gly	Cys	Pro	Ala	Asn	Leu	Leu	Ser
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Ser	His	Arg	Ser	Leu	Val	Gln	Arg	Val	Glu	Thr	Ile	Ser	Leu	Gly	Glu
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His	Pro	Cys	Asp	Arg	Gly	Glu	Gln	Val	Thr	Leu	Phe	Leu	Phe	Asn	Asp
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Cys	Leu	Glu	Ile	Ala	Arg	Lys	Arg	His	Lys	Val	Ile	Gly	Thr	Phe	Arg
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Ser	Pro	His	Gly	Gln	Thr	Arg	Pro	Pro	Ala	Ser	Leu	Lys	His	Ile	His
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Leu	Met	Pro	Leu	Ser	Gln	Ile	Lys	Lys	Val	Leu	Asp	Ile	Arg	Glu	Thr
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Glu	Asp	Cys	His	Asn	Ala	Phe	Ala	Leu	Leu	Val	Arg	Pro	Pro	Thr	Glu
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Gln	Ala	Asn	Val	Leu	Leu	Ser	Phe	Gln	Met	Thr	Ser	Asp	Glu	Leu	Pro
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Lys	Glu	Asn	Trp	Leu	Lys	Met	Leu	Cys	Arg	His	Val	Ala	Asn	Thr	Ile
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Cys	Lys	Ala	Asp	Ala	Glu	Asn	Leu	Ile	Tyr	Thr	Ala	Asp	Pro	Glu	Ser
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Phe	Glu	Val	Asn	Thr	Lys	Asp	Met	Asp	Ser	Thr	Leu	Ser	Arg	Ala	Ser
			260					265					270		
Arg	Ala	Ile	Lys	Lys	Thr	Ser	Lys	Lys	Val	Thr	Arg	Ala	Phe	Ser	Phe
		275					280					285			
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Gly	Ser	Val	Glu	Gly	Arg	Ser	Pro	Ser	Ser	Asn	Asp	Lys	His	Val	Met
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Ser	Arg	Leu	Ser	Ser	Thr	Ser	Ser	Leu	Ala	Gly	Ile	Pro	Ser	Pro	Ser
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Leu	Val	Ser	Leu	Pro	Ser	Phe	Phe	Glu	Arg	Arg	Ser	His	Thr	Leu	Ser
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Met Ser Lys Glu Thr Ile Ile Lys Cys  
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gaa aaa cag aaa cca aga ttt cat gct ttt ctc aag ata aac caa gca 401  
Glu Lys Gln Lys Pro Arg Phe His Ala Phe Leu Lys Ile Asn Gln Ala  
10 15 20 25

aaa cca gaa tgt gga cgg cag agc ctt gtt gaa ctt ctt atc cga cca 449  
Lys Pro Glu Cys Gly Arg Gln Ser Leu Val Glu Leu Leu Ile Arg Pro  
30 35 40

gta cag agg tta ccc agt gtt gca tta ctt tta aat gat ctt aag aag 497  
Val Gln Arg Leu Pro Ser Val Ala Leu Leu Leu Asn Asp Leu Lys Lys  
45 50 55

cat aca gct gat gaa aat cca gac aaa agc act tta gaa aaa gct att 545  
His Thr Ala Asp Glu Asn Pro Asp Lys Ser Thr Leu Glu Lys Ala Ile  
60 65 70

gga tca ctg aag gaa gta atg acg cat att aat gag gat aag aga aaa 593  
Gly Ser Leu Lys Glu Val Met Thr His Ile Asn Glu Asp Lys Arg Lys  
75 80 85

aca gaa gct caa aag caa att ttt gat gtt gtt tat gaa gta gat gga 641  
Thr Glu Ala Gln Lys Gln Ile Phe Asp Val Val Tyr Glu Val Asp Gly  
90 95 100 105

tgc cca gct aat ctt tta tct tct cac cga agc tta gta cag cgg gtt 689  
Cys Pro Ala Asn Leu Leu Ser Ser His Arg Ser Leu Val Gln Arg Val  
110 115 120

gaa aca att tct cta ggt gag cac ccc tgt gac aga gga gaa caa gta 737

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Lys	Val	Ile	Gly	Thr	Phe	Arg	Ser	Pro	His	Gly	Gln	Thr	Arg	Pro	Pro		
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gct	tct	ctt	aag	cat	att	cac	cta	atg	cct	ctt	tct	cag	att	aag	aag	881	
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Val	Leu	Asp	Ile	Arg	Glu	Thr	Glu	Asp	Cys	His	Asn	Ala	Phe	Ala	Leu		
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Leu	Val	Arg	Pro	Pro	Thr	Glu	Gln	Ala	Asn	Val	Leu	Leu	Ser	Phe	Gln		
			205					210					215				
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Ala	Gly	Ile	Pro	Ser	Pro	Ser	Leu	Val	Ser	Leu	Pro	Ser	Phe	Phe	Glu		
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 Ser Asn Cys Asp Ile Val Lys Ala Thr Gln Tyr Gly Ile Phe Glu Arg



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His	Met	Pro	Ile	Ile	Ala	Tyr	Leu	Ile	Ser	Lys	Gly	Gln	Ser	Val	Asn
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Ser	Ser	Leu	Asp	Ile	Gln	Asn	Val	Lys	Gly	Glu	Thr	Pro	Leu	Asp	Met
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Ala	Glu	Thr	Gly	Ser	Leu	Asp	Phe	Arg	Thr	Phe	Cys	Thr	Ser	Cys	Leu
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Cys	Ala	Thr	Thr	Phe	Lys	Glu	Asp	Gly	Leu	Trp	Thr	Tyr	Leu	Asn	Gln
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Gln	Ser	Lys	His	Met	Lys	Gln	Thr	Leu	Ser	Leu	Arg	Lys	Thr	Pro	Tyr
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Gly Leu Gly Ser Gln Cys Arg Asn His Ser His Gly Pro His Pro Pro  
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gga ttt ggt cga tat ggc atc tgt gca cat gaa aac aaa gaa ctt gcc 211  
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Asn Ala Arg Glu Ala Leu Pro Leu Ile Glu Asp Ser Ser Asn Cys Asp  
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Ile Val Lys Ala Thr Gln Tyr Gly Ile Phe Glu Arg Cys Lys Glu Leu  
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gta gaa gca gga tat gat gtc agg caa cca gat aaa gaa aat gtg tcg 355  
Val Glu Ala Gly Tyr Asp Val Arg Gln Pro Asp Lys Glu Asn Val Ser  
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Leu Leu His Trp Ala Ala Ile Asn Asn Arg Leu Asp Leu Val Lys Phe  
85 90 95 100

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Tyr Ile Ser Lys Gly Ala Val Val Asp Gln Leu Gly Gly Asp Leu Asn  
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tca act cct ctt cac tgg gcc atc cga caa gga cat tta cct atg gtc 499  
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120 125 130

ata tta tta ctc cag cat ggt gca gac ccc act ctt att gat gga gag 547  
Ile Leu Leu Leu Gln His Gly Ala Asp Pro Thr Leu Ile Asp Gly Glu  
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165 170 175 180

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gaa cca act gga ttt ctt tta aag ttt aat cct tct ctc aat gtg gtt	739
Glu Pro Thr Gly Phe Leu Leu Lys Phe Asn Pro Ser Leu Asn Val Val	
200 205 210	
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Asp Lys Ile His Gln Asn Thr Pro Leu His Trp Ala Val Ala Ala Gly	
215 220 225	
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Asn Val Asn Ala Val Asp Lys Leu Leu Glu Ala Gly Ser Ser Leu Asp	
230 235 240	
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Ile Gln Asn Val Lys Gly Glu Thr Pro Leu Asp Met Ala Leu Gln Asn	
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Lys Asn Gln Leu Ile Ile His Met Leu Lys Thr Glu Ala Lys Met Arg	
265 270 275	
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Ala Asn Gln Lys Phe Arg Leu Trp Arg Trp Leu Gln Lys Cys Glu Leu	
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Phe Leu Leu Leu Met Leu Ser Val Ile Thr Met Trp Ala Ile Gly Tyr	
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Val Thr Leu Phe Phe Leu Thr Ser Leu Phe Pro Arg Phe Leu Val Gly	
325 330 335 340	
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Tyr Lys Asn Leu Val Tyr Leu Pro Thr Ala Phe Leu Leu Ser Ser Val	
345 350 355	
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Phe Trp Ile Phe Met Thr Trp Phe Ile Leu Phe Phe Pro Asp Leu Ala	
360 365 370	
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Gly Ala Pro Phe Tyr Phe Ser Phe Ile Phe Ser Ile Val Ala Phe Leu	
375 380 385	
tac ttt ttc tat aag act tgg gca act gat cca ggc ttc act aag gct	1315
Tyr Phe Phe Tyr Lys Thr Trp Ala Thr Asp Pro Gly Phe Thr Lys Ala	
390 395 400	
tct gaa gaa gaa aag aaa gtg aat atc atc acc ctt gca gaa act ggc	1363
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Ser Leu Asp Phe Arg Thr Phe Cys Thr Ser Cys Leu Ile Arg Lys Pro	
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Leu Arg Ser Leu His Cys His Val Cys Asn Cys Cys Val Ala Arg Tyr	
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Asp Gln His Cys Leu Trp Thr Gly Arg Cys Ile Gly Phe Gly Asn His	
455 460 465	
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His Tyr Tyr Ile Phe Phe Leu Phe Phe Leu Ser Met Val Cys Gly Trp	
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Phe Lys Glu Asp Gly Leu Trp Thr Tyr Leu Asn Gln Ile Val Ala Cys	
505 510 515	
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Ser Pro Trp Val Leu Tyr Ile Leu Met Leu Ala Thr Phe His Phe Ser	
520 525 530	
tgg tca aca ttt tta tta tta aat caa ctc ttt cag att gcc ttt ctg	1747
Trp Ser Thr Phe Leu Leu Leu Asn Gln Leu Phe Gln Ile Ala Phe Leu	
535 540 545	
ggc ctg acc tcc cat gag aga atc agc ctg cag aag cag agc aag cat	1795
Gly Leu Thr Ser His Glu Arg Ile Ser Leu Gln Lys Gln Ser Lys His	
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Met Lys Gln Thr Leu Ser Leu Arg Lys Thr Pro Tyr Asn Leu Gly Phe	
565 570 575 580	
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Met Gln Asn Leu Ala Asp Phe Phe Gln Cys Gly Cys Phe Gly Leu Val	
585 590 595	
aag ccc tgt gtg gta gat tgg aca tca cag tac acc atg gtc ttt cac	1939
Lys Pro Cys Val Val Asp Trp Thr Ser Gln Tyr Thr Met Val Phe His	
600 605 610	
cca gcc agg gag aag gtt ctt cgc tca gta tgaagaaaag caaccctaaa	1989
Pro Ala Arg Glu Lys Val Leu Arg Ser Val	
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 Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg Lys Pro  
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 Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala Val Leu  
 50 55 60  
 Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe Ala Leu  
 65 70 75 80  
 Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr Ile Gly  
 85 90 95  
 Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr Ser Arg  
 100 105 110  
 Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly Ala Gly  
 115 120 125  
 Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser Thr Gly  
 130 135 140  
 Gln Val Phe Leu Gly Ile Tyr Leu Ile Cys Val Ala Tyr Ser Leu Gln  
 145 150 155 160  
 His Ser Lys Glu Asp Arg Leu Ala Tyr Leu Asn His Leu Pro Gly Gly  
 165 170 175  
 Glu Leu Met Ile Gln Leu Phe Phe Val Leu Tyr Gly Ile Leu Ala Leu  
 180 185 190  
 Ala Phe Leu Ser Gly Tyr Tyr Val Thr Leu Ala Ala Gln Ile Leu Ala  
 195 200 205

Val Leu Leu Pro Pro Val Met Leu Leu Ile Asp Gly Asn Val Ala Tyr  
 210 215 220  
 Trp His Asn Thr Arg Arg Val Glu Phe Trp Asn Gln Met Lys Leu Leu  
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 Ile Met Gln Leu Gly Ser Val Leu Leu Thr Arg Cys Pro Phe Trp Gly  
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 tgc ttc agc cag ctc atg ctg tac gct gag agg gct gag gca cgc cgg 147  
 Cys Phe Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg  
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 aag ccc gac atc cca gtg cct tac ctg tat ttc gac atg ggg gca gcc 195  
 Lys Pro Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala  
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 Val Leu Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe  
 65 70 75  
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 Ala Leu Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr  
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 atc ggg ggc tac gtc cac tac ggg gac tgg ctg aag gtc cgt atg tac 339  
 Ile Gly Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr  
 95 100 105 110  
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 Ser Arg Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly  
 115 120 125  
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 Ala Gly Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser

130										135										140										
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Thr	Asp	Gly																												
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 Leu Thr Glu Leu Gln Leu Arg Ala Arg Gln Leu Leu Asp Gln Val Glu  
             35                    40                    45  
 Gln Ile Gln Lys Glu Gln Asp Tyr Gln Arg Tyr Arg Glu Glu Arg Phe  
             50                    55                    60  
 Arg Leu Thr Ser Glu Ser Thr Asn Gln Arg Val Leu Trp Trp Ser Ile  
     65                    70                    75                    80  
 Ala Gln Thr Val Ile Leu Ile Leu Thr Gly Ile Trp Gln Met Arg His  
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 Ile Gln Val Gly Glu His Ala Asn Asn Tyr Pro Glu Ile Ala Ala Lys  
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 Asp Lys Leu Thr Glu Leu Gln Leu Arg Ala Arg Gln Leu Leu Asp Gln  
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 gtg gaa cag att cag aag gag cag gat tac caa agg tat cgt gaa gag 194  
 Val Glu Gln Ile Gln Lys Glu Gln Asp Tyr Gln Arg Tyr Arg Glu Glu  
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Val Glu Lys Leu Ala Asp Glu Leu His Met Pro Ser Leu Pro Glu Met
      35           40           45

Met Phe Gly Asp Asn Val Leu Arg Ile Gln His Gly Ser Gly Phe Gly
 50           55           60

Ile Glu Phe Asn Ala Thr Asp Ala Leu Arg Cys Val Asn Asn Tyr Gln
 65           70           75           80

Gly Met Leu Lys Val Ala Cys Ala Glu Glu Trp Gln Glu Ser Arg Thr
      85           90           95

Glu Gly Glu His Ser Lys Glu Val Ile Lys Pro Tyr Asp Trp Thr Tyr
      100           105           110

Thr Thr Asp Tyr Lys Gly Thr Leu Leu Gly Glu Ser Leu Lys Leu Lys
      115           120           125

Val Val Pro Thr Thr Asp His Ile Asp Thr Glu Lys Leu Lys Ala Arg
      130           135           140

Glu Gln Ile Lys Phe Phe Glu Glu Val Leu Leu Phe Glu Asp Glu Leu
      145           150           155           160

His Asp His Gly Val Ser Ser Leu Ser Val Lys Ile Arg Val Met Pro
      165           170           175

Ser Ser Phe Phe Leu Leu Leu Arg Phe Phe Leu Arg Ile Asp Gly Val
      180           185           190

Leu Ile Arg Met Asn Asp Thr Arg Leu Tyr His Glu Ala Asp Lys Thr
      195           200           205

Tyr Met Leu Arg Glu Tyr Thr Ser Arg Glu Ser Lys Ile Ser Ser Leu
      210           215           220

Met His Val Pro Pro Ser Leu Phe Thr Glu Pro Asn Glu Ile Ser Gln
      225           230           235           240

Tyr Leu Pro Ile Lys Glu Ala Val Cys Glu Lys Leu Ile Phe Pro Glu
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Arg Ile Asp Pro Asn Pro Ala Asp Ser Gln Lys Ser Thr Gln Val Glu
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<211> 1916

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<213> Homo sapiens

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Met  
1

atg atc cac ggc ttc cag agc agc cac cgg gat ttc tgc ttc ggg ccc 167  
Met Ile His Gly Phe Gln Ser Ser His Arg Asp Phe Cys Phe Gly Pro  
5 10 15

tgg aag ctg acg gcg tcc aag acc cac atc atg aag tgc gcg gat gtg 215  
Trp Lys Leu Thr Ala Ser Lys Thr His Ile Met Lys Ser Ala Asp Val  
20 25 30

gag aaa tta gcc gat gaa tta cat atg cca tct ctc cct gaa atg atg 263  
Glu Lys Leu Ala Asp Glu Leu His Met Pro Ser Leu Pro Glu Met Met  
35 40 45

ttt gga gac aac gtt tta aga atc cag cat ggg tct ggc ttt gga att 311  
Phe Gly Asp Asn Val Leu Arg Ile Gln His Gly Ser Gly Phe Gly Ile  
50 55 60 65

gag ttc aat gct aca gat gcg tta aga tgt gta aac aac tac caa gga 359  
Glu Phe Asn Ala Thr Asp Ala Leu Arg Cys Val Asn Asn Tyr Gln Gly  
70 75 80

atg ctt aaa gtg gcc tgt gct gaa gag tgg caa gaa agc agg acg gag 407  
Met Leu Lys Val Ala Cys Ala Glu Glu Trp Gln Glu Ser Arg Thr Glu  
85 90 95

ggt gaa cac tcc aaa gag gtt att aaa cca tat gat tgg acc tat aca 455  
Gly Glu His Ser Lys Glu Val Ile Lys Pro Tyr Asp Trp Thr Tyr Thr  
100 105 110

aca gat tat aag gga acc tta ctt gga gaa tct ctt aag tta aag gtt 503  
Thr Asp Tyr Lys Gly Thr Leu Leu Gly Glu Ser Leu Lys Leu Lys Val  
115 120 125

gta cct aca aca gat cat ata gat aca gaa aaa ttg aaa gcc aga gaa 551  
Val Pro Thr Thr Asp His Ile Asp Thr Glu Lys Leu Lys Ala Arg Glu  
130 135 140 145

cag att aag ttt ttt gaa gaa gtt ctc ctt ttt gag gat gaa ctt cat 599  
Gln Ile Lys Phe Phe Glu Glu Val Leu Leu Phe Glu Asp Glu Leu His  
150 155 160

gat cat gga gtt tca agc ctg agt gtg aag att aga gta atg cct tct 647  
Asp His Gly Val Ser Ser Leu Ser Val Lys Ile Arg Val Met Pro Ser  
165 170 175

agc ttt ttc ctg ctg ttg cgg ttt ttc ttg aga att gat ggg gtg ctt 695

Ser	Phe	Phe	Leu	Leu	Leu	Arg	Phe	Phe	Leu	Arg	Ile	Asp	Gly	Val	Leu	
		180					185					190				
atc	aga	atg	aat	gac	acg	aga	ctt	tac	cat	gag	gct	gac	aag	acc	tac	743
Ile	Arg	Met	Asn	Asp	Thr	Arg	Leu	Tyr	His	Glu	Ala	Asp	Lys	Thr	Tyr	
	195					200				205						
atg	tta	cga	gaa	tat	acg	tca	cga	gaa	agc	aaa	att	tct	agt	ttg	atg	791
Met	Leu	Arg	Glu	Tyr	Thr	Ser	Arg	Glu	Ser	Lys	Ile	Ser	Ser	Leu	Met	
	210				215					220				225		
cat	gtt	cca	cct	tcc	ctc	ttc	acg	gaa	cct	aat	gaa	ata	tcc	cag	tat	839
His	Val	Pro	Pro	Ser	Leu	Phe	Thr	Glu	Pro	Asn	Glu	Ile	Ser	Gln	Tyr	
				230				235						240		
tta	cca	ata	aag	gaa	gca	gtt	tgt	gag	aag	cta	ata	ttt	cca	gaa	aga	887
Leu	Pro	Ile	Lys	Glu	Ala	Val	Cys	Glu	Lys	Leu	Ile	Phe	Pro	Glu	Arg	
			245					250					255			
att	gat	cct	aac	cca	gca	gac	tca	caa	aaa	agt	aca	caa	gtg	gaa		932
Ile	Asp	Pro	Asn	Pro	Ala	Asp	Ser	Gln	Lys	Ser	Thr	Gln	Val	Glu		
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aggggttatt tttattatga gaattaattg ccttggttat gtacagattt tctgtagcct 1052																
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tcttggtccc tgaatagtcc tagattactt attttgagaa ttgattgtta aaaattacag 1712																
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agaataaaca ataaggaatt actg 1916																

14-00000

<400> 61

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Lys Lys Ile Ser Arg Leu Asp Ala Glu Leu Val Lys Tyr Lys Asp Gln  
35 40 45

Ile Lys Lys Met Arg Glu Gly Pro Ala Lys Asn Met Val Lys Gln Lys  
50 55 60

Ala Leu Arg Val Leu Lys Gln Lys Arg Met Tyr Glu Gln Gln Arg Asp  
65 70 75 80

Asn Leu Ala Gln Gln Ser Phe Asn Met Glu Gln Ala Asn Tyr Thr Ile  
85 90 95

Gln Ser Leu Lys Asp Thr Lys Thr Thr Val Asp Ala Met Lys Leu Gly  
100 105 110

Val Lys Glu Met Lys Lys Ala Tyr Lys Gln Val Lys Ile Asp Gln Ile  
115 120 125

Glu Asp Leu Gln Asp Gln Leu Glu Asp Met Met Glu Asp Ala Asn Glu  
130 135 140

Ile Gln Glu Ala Leu Ser Arg Ser Tyr Gly Thr Pro Glu Leu Asp Glu  
145 150 155 160

Asp Asp Leu Glu Ala Glu Leu Asp Ala Leu Gly Asp Glu Leu Leu Ala  
165 170 175

Asp Glu Asp Ser Ser Tyr Leu Asp Glu Ala Ala Ser Ala Pro Ala Ile  
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Pro Glu Gly Val Pro Thr Asp Thr Lys Asn Lys Asp Gly Val Leu Val  
195 200 205

Asp Glu Phe Gly Leu Pro Gln Ile Pro Ala Ser  
210 215

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<222> (49)..(705)

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                                   1

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Leu Phe Gly Lys Ala Lys Pro Lys Ala Pro Pro Pro Ser Leu Thr Asp
      5                      10                      15

tgc att ggc acg gtg gac agt aga gca gaa tcc att gac aag aag att 153
Cys Ile Gly Thr Val Asp Ser Arg Ala Glu Ser Ile Asp Lys Lys Ile
      20                      25                      30                      35

tct cga ttg gat gct gag cta gtg aag tat aag gat cag atc aag aag 201
Ser Arg Leu Asp Ala Glu Leu Val Lys Tyr Lys Asp Gln Ile Lys Lys
              40                      45                      50

atg aga gag ggt cct gca aag aat atg gtc aag cag aaa gcc ttg cga 249
Met Arg Glu Gly Pro Ala Lys Asn Met Val Lys Gln Lys Ala Leu Arg
              55                      60                      65

gtt tta aag caa aag agg atg tat gag cag cag cgg gac aat ctt gcc 297
Val Leu Lys Gln Lys Arg Met Tyr Glu Gln Gln Arg Asp Asn Leu Ala
      70                      75                      80

caa cag tca ttc aac atg gaa caa gcc aat tat acc atc cag tct ttg 345
Gln Gln Ser Phe Asn Met Glu Gln Ala Asn Tyr Thr Ile Gln Ser Leu
      85                      90                      95

aag gac acc aag acc acg gtt gat gct atg aaa ctg gga gta aag gaa 393
Lys Asp Thr Lys Thr Thr Val Asp Ala Met Lys Leu Gly Val Lys Glu
100                      105                      110                      115

atg aag aag gca tac aag caa gtg aag atc gac cag att gag gat tta 441
Met Lys Lys Ala Tyr Lys Gln Val Lys Ile Asp Gln Ile Glu Asp Leu
              120                      125                      130

caa gac cag cta gag gat atg atg gaa gat gca aat gaa atc caa gaa 489
Gln Asp Gln Leu Glu Asp Met Met Glu Asp Ala Asn Glu Ile Gln Glu
              135                      140                      145

gca ctg agt cgc agt tat ggc acc cca gaa ctg gat gaa gat gat tta 537
Ala Leu Ser Arg Ser Tyr Gly Thr Pro Glu Leu Asp Glu Asp Asp Leu
              150                      155                      160

gaa gca gag ttg gat gca cta ggt gat gag ctt ctg gct gat gaa gac 585
Glu Ala Glu Leu Asp Ala Leu Gly Asp Glu Leu Leu Ala Asp Glu Asp
      165                      170                      175

agt tct tat ttg gat gag gca gca tct gca cct gca att cca gaa ggt 633
Ser Ser Tyr Leu Asp Glu Ala Ala Ser Ala Pro Ala Ile Pro Glu Gly
180                      185                      190                      195

gtt ccc act gat aca aaa aac aag gat gga gtt ctg gtg gat gaa ttt 681
Val Pro Thr Asp Thr Lys Asn Lys Asp Gly Val Leu Val Asp Glu Phe

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200

205

210

gga ttg cca cag atc cct gct tca tagatttgca tcattcaagc atatcttgta 735  
Gly Leu Pro Gln Ile Pro Ala Ser

215

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ttaggtttct ttcctttctt tgaaggaaag ttaattaca ttgctctttt attttttcca 855  
ttaagagact cattgcttgg gaaatgcttt cttcgtacta aaatttgatt cctttttttt 915  
cttatgaaaa acgaactcag tttaaaagta tttttagctc gtatgacttg ttttcattca 975  
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tggaattatc actactgtat catgagtggg tattttgatt ctatggttcc ctcagtatta 1275  
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<212> PRT

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Tyr Gly Glu Pro Leu Gly Arg Lys Thr His Ile Asp Asp Tyr Ser Thr  
35 40 45

Trp Asp Ile Val Lys Ala Thr Gln Tyr Gly Ile Tyr Glu Arg Cys Arg  
50 55 60

Glu Leu Val Glu Ala Gly Tyr Asp Val Arg Gln Pro Asp Lys Glu Asn  
65 70 75 80

Val Thr Leu Leu His Trp Ala Ala Ile Asn Asn Arg Ile Asp Leu Val  
85 90 95

Lys Tyr Tyr Ile Ser Lys Gly Ala Ile Val Asp Gln Leu Gly Gly Asp  
100 105 110

Leu Asn Ser Thr Pro Leu His Trp Ala Thr Arg Gln Gly His Leu Ser



115 120 125

Met Val Val Gln Leu Met Lys Tyr Gly Ala Asp Pro Ser Leu Ile Asp  
130 135 140

Gly Glu Gly Cys Ser Cys Ile His Leu Ala Ala Gln Phe Gly His Thr  
145 150 155 160

Ser Ile Val Ala Tyr Leu Ile Ala Lys Gly Gln Asp Val Asp Met Met  
165 170 175

Asp Gln Asn Gly Met Thr Pro Leu Met Trp Ala Ala Tyr Arg Thr His  
180 185 190

Ser Val Asp Pro Thr Arg Leu Leu Leu Thr Phe Asn Val Ser Val Asn  
195 200 205

Leu Gly Asp Lys Tyr His Lys Asn Thr Ala Leu His Trp Ala Val Leu  
210 215 220

Ala Gly Asn Thr Thr Val Ile Ser Leu Leu Leu Glu Ala Gly Ala Asn  
225 230 235 240

Val Asp Ala Gln Asn Ile Lys Gly Glu Ser Ala Leu Asp Leu Ala Lys  
245 250 255

Gln Arg Lys Asn Val Trp Met Ile Asn His Leu Gln Glu Ala Arg Gln  
260 265 270

Ala Lys Gly Tyr Asp Asn Pro Ser Phe Leu Arg Lys Leu Lys Ala Asp  
275 280 285

Lys Glu Phe Arg Gln Lys Val Met Leu Gly Thr Pro Phe Leu Val Ile  
290 295 300

Trp Leu Val Gly Phe Ile Ala Asp Leu Asn Ile Asp Ser Trp Leu Ile  
305 310 315 320

Lys Gly Leu Met Tyr Gly Gly Val Trp Ala Thr Val Gln Phe Leu Ser  
325 330 335

Lys Ser Phe Phe Asp His Ser Met His Ser Ala Leu Pro Leu Gly Ile  
340 345 350

Tyr Leu Ala Thr Lys Phe Trp Met Tyr Val Thr Trp Phe Phe Trp Phe  
355 360 365

Trp Asn Asp Leu Asn Phe Leu Phe Ile His Leu Pro Phe Leu Ala Asn  
370 375 380

Ser Val Ala Leu Phe Tyr Asn Phe Gly Lys Ser Trp Lys Ser Asp Pro  
385 390 395 400

Gly Ile Ile Lys Ala Thr Glu Glu Gln Lys Lys Lys Thr Ile Val Glu  
405 410 415

Leu Ala Glu Thr Gly Ser Leu Asp Leu Ser Ile Phe Cys Ser Thr Cys

	420							425						430					
Leu	Ile	Arg	Lys	Pro	Val	Arg	Ser	Lys	His	Cys	Gly	Val	Cys	Asn	Arg				
		435					440					445							
Cys	Ile	Ala	Lys	Phe	Asp	His	His	Cys	Pro	Trp	Val	Gly	Asn	Cys	Val				
	450					455					460								
Gly	Ala	Gly	Asn	His	Arg	Tyr	Phe	Met	Gly	Tyr	Leu	Phe	Phe	Leu	Leu				
465					470					475					480				
Phe	Met	Ile	Cys	Trp	Met	Ile	Tyr	Gly	Cys	Ile	Ser	Tyr	Trp	Gly	Leu				
				485					490					495					
His	Cys	Glu	Thr	Thr	Tyr	Thr	Lys	Asp	Gly	Phe	Trp	Thr	Tyr	Ile	Thr				
			500					505					510						
Gln	Ile	Ala	Thr	Cys	Ser	Pro	Trp	Met	Phe	Trp	Met	Phe	Leu	Asn	Ser				
		515					520					525							
Val	Phe	His	Phe	Met	Trp	Val	Ala	Val	Leu	Leu	Met	Cys	Gln	Met	Tyr				
	530					535					540								
Gln	Ile	Ser	Cys	Leu	Gly	Ile	Thr	Thr	Asn	Glu	Arg	Met	Asn	Ala	Arg				
545					550					555					560				
Arg	Tyr	Lys	His	Phe	Lys	Val	Thr	Thr	Thr	Ser	Ile	Glu	Ser	Pro	Phe				
				565					570					575					
Asn	His	Gly	Cys	Val	Arg	Asn	Ile	Ile	Asp	Phe	Phe	Glu	Phe	Arg	Cys				
			580					585					590						
Cys	Gly	Leu	Phe	Arg	Pro	Val	Ile	Val	Asp	Trp	Thr	Arg	Gln	Tyr	Thr				
		595					600					605							
Ile	Glu	Tyr	Asp	Gln	Ile	Ser	Gly	Ser	Gly	Tyr	Gln	Leu	Val						
	610					615					620								

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<211> 2948
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<213> Homo sapiens
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<221> CDS
<222> (14) .. (1879)
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ggc tgt gtg ccc ctt ctc cac cca gag gaa atc aaa ccc caa agc cat 97  
Gly Cys Val Pro Leu Leu His Pro Glu Glu Ile Lys Pro Gln Ser His  
15 20 25

tat aac cat gga tat ggt gaa cct ctt gga cgg aaa act cat att gat	145
Tyr Asn His Gly Tyr Gly Glu Pro Leu Gly Arg Lys Thr His Ile Asp	
30 35 40	
gat tac agc aca tgg gac ata gtc aag gct aca caa tat gga ata tat	193
Asp Tyr Ser Thr Trp Asp Ile Val Lys Ala Thr Gln Tyr Gly Ile Tyr	
45 50 55 60	
gaa cgc tgt cga gaa ttg gtg gaa gca ggt tat gat gta cgg caa ccg	241
Glu Arg Cys Arg Glu Leu Val Glu Ala Gly Tyr Asp Val Arg Gln Pro	
65 70 75	
gac aaa gaa aat gtt acc ctc ctc cat tgg gct gcc atc aat aac aga	289
Asp Lys Glu Asn Val Thr Leu Leu His Trp Ala Ala Ile Asn Asn Arg	
80 85 90	
ata gat tta gtc aaa tac tat att tcg aaa ggt gct att gtg gat caa	337
Ile Asp Leu Val Lys Tyr Tyr Ile Ser Lys Gly Ala Ile Val Asp Gln	
95 100 105	
ctt gga ggg gac ctg aat tca act cca ttg cac tgg gcc aca aga caa	385
Leu Gly Gly Asp Leu Asn Ser Thr Pro Leu His Trp Ala Thr Arg Gln	
110 115 120	
ggc cat cta tcc atg gtt gtg caa cta atg aaa tat ggt gca gat cct	433
Gly His Leu Ser Met Val Val Gln Leu Met Lys Tyr Gly Ala Asp Pro	
125 130 135 140	
tca tta att gat gga gaa gga tgt agc tgt att cat ctg gct gct cag	481
Ser Leu Ile Asp Gly Glu Gly Cys Ser Cys Ile His Leu Ala Ala Gln	
145 150 155	
ttc gga cat acc tca att gtt gct tat ctc ata gca aaa gga cag gat	529
Phe Gly His Thr Ser Ile Val Ala Tyr Leu Ile Ala Lys Gly Gln Asp	
160 165 170	
gta gat atg atg gat cag aat gga atg acg cct tta atg tgg gca gca	577
Val Asp Met Met Asp Gln Asn Gly Met Thr Pro Leu Met Trp Ala Ala	
175 180 185	
tat aga aca cat agt gtg gat cca act aga ttg ctt tta aca ttc aat	625
Tyr Arg Thr His Ser Val Asp Pro Thr Arg Leu Leu Leu Thr Phe Asn	
190 195 200	
gtt tca gtt aac ctt ggt gac aag tat cac aaa aac act gct ctg cat	673
Val Ser Val Asn Leu Gly Asp Lys Tyr His Lys Asn Thr Ala Leu His	
205 210 215 220	
tgg gca gtg cta gca ggg aat acc aca gtc att agc ctt ctt ctg gaa	721
Trp Ala Val Leu Ala Gly Asn Thr Thr Val Ile Ser Leu Leu Leu Glu	
225 230 235	
gct gga gct aat gtt gat gcc cag aat atc aag ggc gaa tca gcg ctt	769
Ala Gly Ala Asn Val Asp Ala Gln Asn Ile Lys Gly Glu Ser Ala Leu	
240 245 250	
gat ttg gca aaa cag aga aaa aat gtg tgg atg atc aac cac tta caa	817

$\frac{1}{\sqrt{\pi}} \int_{-\infty}^{\infty} f(x) \delta(x-a) dx = f(a)$

	480	485	490	
tac tgg gga ctc cac tgt gag acc act tac acc aag gat gga ttt tgg				1537
Tyr Trp Gly Leu His Cys Glu Thr Thr Tyr Thr Lys Asp Gly Phe Trp				
	495	500	505	
aca tac att act cag att gcc acg tgt tca cct tgg atg ttt tgg atg				1585
Thr Tyr Ile Thr Gln Ile Ala Thr Cys Ser Pro Trp Met Phe Trp Met				
	510	515	520	
ttc ctg aac agt gtt ttc cac ttc atg tgg gtg gct gta tta ctc atg				1633
Phe Leu Asn Ser Val Phe His Phe Met Trp Val Ala Val Leu Leu Met				
525		530	535	540
tgt cag atg tac cag ata tca tgt tta ggt att act aca aat gaa aga				1681
Cys Gln Met Tyr Gln Ile Ser Cys Leu Gly Ile Thr Thr Asn Glu Arg				
	545		550	555
atg aat gcc agg aga tac aag cac ttt aaa gtc aca aca acg tct att				1729
Met Asn Ala Arg Arg Tyr Lys His Phe Lys Val Thr Thr Thr Ser Ile				
	560		565	570
gaa agc cca ttc aac cat gga tgt gta aga aat att ata gac ttc ttt				1777
Glu Ser Pro Phe Asn His Gly Cys Val Arg Asn Ile Ile Asp Phe Phe				
	575		580	585
gaa ttt cga tgc tgt ggc ctc ttt cgt cct gtt atc gtg gac tgg acc				1825
Glu Phe Arg Cys Cys Gly Leu Phe Arg Pro Val Ile Val Asp Trp Thr				
	590		595	600
agg cag tat aca ata gaa tat gac caa ata tca gga tct ggg tac cag				1873
Arg Gln Tyr Thr Ile Glu Tyr Asp Gln Ile Ser Gly Ser Gly Tyr Gln				
605		610	615	620
ctg gtg tagcgacatc ttatccatatg aagcatattg ctgagtggtag cctgaaaatt				1929
Leu Val				
gtgtctgtcc gtgtctttct cacactcgaa tccacatcct ttgaacaaga gcatgctatg				1989
tgtagggcta atggtgaatt ttacagtctt tttttcaaca cttttattaa caaaagtaaa				2049
catggacaga acacactgcc attttctggga agagttaaaga tgataaaaaa taattttaat				2109
ggttcttaat gtggaaattc acaacatact caacttttgg gttttgttct cacagtattt				2169
ttcacaaaaa aagggtaaac ttattctatt gacagacatg gtgtactgat cagaaatggt				2229
cagttttaac taaaactaaa tttatgttat ttggctaaat gttatgatgc agtctagtac				2289
gagtattgca tctaattcca ggagcattgt ttttaagtga ttgactagtt attatgtaca				2349
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ttgtcttcaa aggcaggaga aaataatggt cacaataaaa tgtgctaaca atgttttgtt				2469
tctatcagct gttgcaatgc tgatatattt ctagtccagt gaaataattt gtagtaacct				2529



Pro Leu Met Trp Ala Ala Tyr Arg Thr His Ser Val Asp Pro Thr Arg  
195 200 205

Leu Leu Leu Thr Phe Asn Val Ser Val Asn Leu Gly Asp Lys Tyr His  
210 215 220

Lys Asn Thr Ala Leu His Trp Ala Val Leu Ala Gly Asn Thr Thr Val  
225 230 235

Ile Ser Leu Leu Leu Glu Ala Gly Ala Asn Val Asp Ala Gln Asn Ile  
245 250 255

Lys Gly Glu Ser Ala Leu Asp Leu Ala Lys Gln Arg Lys Asn Val Trp  
260 265 270

Met Ile Asn His Leu Gln Glu Ala Arg Gln Ala Lys Gly Tyr Asp Asn  
275 280 285

Pro Ser Phe Leu Arg Lys Leu Lys Ala Asp Lys Glu Phe Arg Gln Lys  
290 295 300

Val Met Leu Gly Thr Pro Phe Leu Val Ile Trp Leu Val Gly Phe Ile  
305 310 315 320

Ala Asp Leu Asn Ile Asp Ser Trp Leu Ile Lys Gly Leu Met Tyr Gly  
325 330 335

Gly Val Trp Ala Thr Val Gln Phe Leu Ser Lys Ser Phe Phe Asp His  
340 345 350

Ser Met His Ser Ala Leu Pro Leu Gly Ile Tyr Leu Ala Thr Lys Phe  
355 360 365

Trp Met Tyr Val Thr Trp Phe Phe Trp Phe Trp Asn Asp Leu Asn Phe  
370 375 380

Leu Phe Ile His Leu Pro Phe Leu Ala Asn Ser Val Ala Leu Phe Tyr  
385 390 395 400

Asn Phe Gly Lys Ser Trp Lys Ser Asp Pro Gly Ile Ile Lys Ala Thr  
405 410 415

Glu Glu Gln Lys Lys Lys Thr Ile Val Glu Leu Ala Glu Thr Gly Ser  
420 425 430

Leu Asp Leu Ser Ile Phe Cys Ser Thr Cys Leu Ile Arg Lys Pro Val  
435 440 445

Arg Ser Lys His Cys Gly Val Cys Asn Arg Cys Ile Ala Lys Phe Asp  
450 455 460

His His Cys Pro Trp Val Gly Asn Cys Val Gly Ala Gly Asn His Arg  
465 470 475 480

Tyr Phe Met Gly Tyr Leu Phe Phe Leu Leu Phe Met Ile Cys Trp Met  
485 490 495

Ile Tyr Gly Cys Ile Ser Tyr Trp Gly Leu His Cys Glu Thr Thr Tyr  
500 505 510

Thr Lys Asp Gly Phe Trp Thr Tyr Ile Thr Gln Ile Ala Thr Cys Ser  
515 520 525

Pro Trp Met Phe Trp Met Phe Leu Asn Ser Val Phe His Phe Met Trp  
530 535 540

Val Ala Val Leu Leu Met Cys Gln Met Tyr Gln Ile Ser Cys Leu Gly  
545 550 555 560

Ile Thr Thr Asn Glu Arg Met Asn Ala Arg Arg Tyr Lys His Phe Lys  
565 570 575

Val Thr Thr Thr Ser Ile Glu Ser Pro Phe Asn His Gly Cys Val Arg  
580 585 590

Asn Ile Ile Asp Phe Phe Glu Phe Arg Cys Cys Gly Leu Phe Arg Pro  
595 600 605

Val Ile Val Asp Trp Thr Arg Gln Tyr Thr Ile Glu Tyr Asp Gln Ile  
610 615 620

Ser Gly Ser Gly Tyr Gln Leu Val  
625 630

<210> 66  
<211> 4715  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (108)..(2003)

<400> 66  
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cctccgctc gcccgagccc cgggagggtg aaacgctttc tcccagc atg cag cgg 116  
Met Gln Arg  
1

gag gag gga ttt aac acc aag atg gcg gac ggc ccg gat gag tac gat 164  
Glu Glu Gly Phe Asn Thr Lys Met Ala Asp Gly Pro Asp Glu Tyr Asp  
5 10 15

acc gaa gcg ggc tgt gtg ccc ctt ctc cac cca gag gaa atc aaa ccc 212  
Thr Glu Ala Gly Cys Val Pro Leu Leu His Pro Glu Glu Ile Lys Pro  
20 25 30 35

caa agc cat tat aac cat gga tat ggt gaa cct ctt gga cgg aaa act 260  
Gln Ser His Tyr Asn His Gly Tyr Gly Glu Pro Leu Gly Arg Lys Thr  
40 45 50

cat att gat gat tac agc aca tgg gac ata gtc aag gct aca caa tat 308



14-00000

280										285					290					
ctt	aga	aag	ctg	aaa	gct	gat	aag	gaa	ttt	cgg	cag	aaa	gta	atg	tta	1028				
Leu	Arg	Lys	Leu	Lys	Ala	Asp	Lys	Glu	Phe	Arg	Gln	Lys	Val	Met	Leu					
			295				300						305							
gga	act	cct	ttc	cta	gtt	att	tgg	ctg	gtt	ggg	ttt	ata	gca	gac	cta	1076				
Gly	Thr	Pro	Phe	Leu	Val	Ile	Trp	Leu	Val	Gly	Phe	Ile	Ala	Asp	Leu					
			310				315						320							
aat	att	gat	tct	tgg	ctc	att	aaa	ggg	cta	atg	tat	ggg	ggg	gtt	tgg	1124				
Asn	Ile	Asp	Ser	Trp	Leu	Ile	Lys	Gly	Leu	Met	Tyr	Gly	Gly	Val	Trp					
			325				330						335							
gct	aca	gta	cag	ttt	ctt	tca	aaa	tcc	ttt	ttc	gat	cat	tca	atg	cat	1172				
Ala	Thr	Val	Gln	Phe	Leu	Ser	Lys	Ser	Phe	Phe	Asp	His	Ser	Met	His					
			340				345						350							
agt	gca	ttg	ccc	ctt	ggg	ata	tat	ttg	gca	acc	aaa	ttc	tgg	atg	tat	1220				
Ser	Ala	Leu	Pro	Leu	Gly	Ile	Tyr	Leu	Ala	Thr	Lys	Phe	Trp	Met	Tyr					
			360				365						370							
gtg	acg	tgg	ttc	ttc	tgg	ttt	tgg	aat	gat	ctc	aac	ttt	tta	ttt	atc	1268				
Val	Thr	Trp	Phe	Phe	Trp	Phe	Trp	Asn	Asp	Leu	Asn	Phe	Leu	Phe	Ile					
			375				380						385							
cat	ctt	cca	ttc	ctt	gcc	aat	agt	gtt	gca	ctt	ttc	tac	aat	ttt	gga	1316				
His	Leu	Pro	Phe	Leu	Ala	Asn	Ser	Val	Ala	Leu	Phe	Tyr	Asn	Phe	Gly					
			390				395						400							
aaa	tct	tgg	aaa	tca	gat	cca	ggg	att	att	aaa	gca	aca	gaa	gag	caa	1364				
Lys	Ser	Trp	Lys	Ser	Asp	Pro	Gly	Ile	Ile	Lys	Ala	Thr	Glu	Glu	Gln					
			405				410						415							
aag	aaa	aag	aca	ata	gtt	gaa	ctt	gca	gag	aca	gga	agt	ctg	gac	ctc	1412				
Lys	Lys	Lys	Thr	Ile	Val	Glu	Leu	Ala	Glu	Thr	Gly	Ser	Leu	Asp	Leu					
			420				425						430							
agt	ata	ttc	tgc	agt	acc	tgt	ttg	ata	cga	aaa	ccg	gtg	agg	tcc	aaa	1460				
Ser	Ile	Phe	Cys	Ser	Thr	Cys	Leu	Ile	Arg	Lys	Pro	Val	Arg	Ser	Lys					
			440				445						450							
cat	tgt	ggg	gtg	tgc	aac	cgc	tgt	ata	gca	aaa	ttt	gat	cat	cat	tgc	1508				
His	Cys	Gly	Val	Cys	Asn	Arg	Cys	Ile	Ala	Lys	Phe	Asp	His	His	Cys					
			455				460						465							
cca	tgg	gtg	ggg	aac	tgt	gta	ggg	gca	ggc	aac	cat	aga	tat	ttt	atg	1556				
Pro	Trp	Val	Gly	Asn	Cys	Val	Gly	Ala	Gly	Asn	His	Arg	Tyr	Phe	Met					
			470				475						480							
ggc	tac	cta	ttc	ttc	ttg	ctt	ttt	atg	atc	tgc	tgg	atg	att	tat	ggg	1604				
Gly	Tyr	Leu	Phe	Phe	Leu	Leu	Phe	Met	Ile	Cys	Trp	Met	Ile	Tyr	Gly					
			485																	



tgtatactag cagatactat ccagtggaagc ataaattaga atttaatttg atgttcaaaa 2823  
 acagttccat ttttaagggg taaggtggta ttttcaagaa aaggcagaac aaataatgca 2883  
 aaattctcag taatagtgtat acatggatat acttcctttt aaattctcag ctgcaaaaata 2943  
 attgtagaca aaataatggc atttaactaa agatggagca tgatctaagt acatagcaca 3003  
 tgtgaataaa agaaaagctg acagtatatt ctggtttcaa taaaatgacc tatcagaaaag 3063  
 tagaatttca tccccagag tatttcagtt tatccaatat tgagtaagtt ctgaaacagt 3123  
 tttagaaaaa attttctttt tgttaaatgt gatgcactga tcaatttttg tcacagcatt 3183  
 ttcatacctt catgggtggac tactagtcac tgcttccata aatattgttt acagggtgag 3243  
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 tgtatatagt tgatgttcag ttttccaag taccattttt atatagtagc ttatttgacc 3723  
 ataagtcaca catcaaaaaa agattaccct tagtgatatgt gttttaatat tagaaaattg 3783  
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 ccattttgtc atagaatgta aaaattggtt aactttacaa atgtcagcta gttttgacta 3903  
 ctaattgggg gaaatttttag ataattttta aattcaaagt tatttataaa atgctagaat 3963  
 ttgttttaat tttttgtatt ttgagccact tcacatgaag actcagttgc atttttatcg 4023  
 aatacatttt tatcaacagt taaagactat ggtggttttt tcagagtttg gctaagaatg 4083  
 ttgttaccat cttctttgtt tgtggtacaa tattttcagt gcaaaagaga tgtcattcag 4143  
 ttaaaaagac aaacctctag atgtgtaatt acatggaaaa tactagcaat gtgaatgctt 4203  
 ttgtagtaac catctttag tagctgtgaa atctataact cagaaatggc cagatgggtca 4263  
 ggagccagct atgcagcagt ataccatctg ttttaattatt ttgtaggtcc tgtgtgtgga 4323  
 accaactata aaccagttc taaagttgtg tatgatgggt aacctttggg aatagttctt 4383  
 atcaacttaa ttggatactt ttagcaaata ggaacttaat tctcagcact gaacatgaat 4443  
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<210> 67  
 <211> 498  
 <212> PRT  
 <213> Homo sapiens

<400> 67  
 Met Ala Arg Leu Glu Val Ile Glu Leu Pro His Ser Pro Gln Asn Leu  
 1 5 10 15  
 Leu Val Ser Pro Asn Ser Ser His Ser His Ala Val Val Leu Ser Trp  
 20 25 30  
 Val Arg Pro Phe Asp Gly Asn Ser Pro Ile Leu Tyr Tyr Ile Val Glu  
 35 40 45  
 Leu Ser Glu Asn Asn Ser Pro Trp Lys Val His Leu Ser Asn Val Gly  
 50 55 60  
 Pro Glu Met Thr Gly Val Thr Val Ser Gly Leu Thr Pro Ala Arg Thr  
 65 70 75 80  
 Tyr Gln Phe Arg Val Cys Ala Val Asn Glu Val Gly Arg Gly Gln Tyr  
 85 90 95  
 Ser Ala Glu Thr Ser Arg Leu Met Leu Pro Glu Glu Pro Pro Ser Ala  
 100 105 110  
 Pro Pro Lys Asn Ile Val Ala Ser Gly Arg Thr Asn Gln Ser Ile Met  
 115 120 125  
 Val Gln Trp Gln Pro Pro Pro Glu Thr Glu His Asn Gly Val Leu Arg  
 130 135 140  
 Gly Tyr Ile Leu Arg Tyr Arg Leu Ala Gly Leu Pro Gly Glu Tyr Gln  
 145 150 155 160  
 Gln Arg Asn Ile Thr Ser Pro Glu Val Asn Tyr Cys Leu Val Thr Asp  
 165 170 175  
 Leu Ile Ile Trp Thr Gln Tyr Glu Ile Gln Val Ala Ala Tyr Asn Gly  
 180 185 190  
 Ala Gly Leu Gly Val Phe Ser Arg Ala Val Thr Glu Tyr Thr Leu Gln  
 195 200 205  
 Gly Val Pro Thr Ala Pro Pro Gln Asn Val Gln Thr Glu Ala Val Asn  
 210 215 220

Ser Thr Thr Ile Gln Phe Leu Trp Asn Pro Pro Gln Gln Phe Ile	225	230	235	240
Asn Gly Ile Asn Gln Gly Tyr Lys Leu Leu Ala Trp Pro Ala Asp Ala		245	250	255
Pro Glu Ala Val Thr Val Val Thr Ile Ala Pro Asp Phe His Gly Val		260	265	270
His His Gly His Ile Thr Asn Leu Lys Lys Phe Thr Ala Tyr Phe Thr		275	280	285
Ser Val Leu Cys Phe Thr Thr Pro Gly Asp Gly Pro Pro Ser Thr Pro		290	295	300
Gln Leu Val Trp Thr Gln Glu Asp Lys Pro Gly Ala Val Gly His Leu	305	310	315	320
Ser Phe Thr Glu Ile Leu Asp Thr Ser Leu Lys Val Ser Trp Gln Glu		325	330	335
Pro Leu Glu Lys Asn Gly Ile Ile Thr Gly Tyr Gln Ile Ser Trp Glu		340	345	350
Val Tyr Gly Arg Asn Asp Ser Arg Leu Thr His Thr Leu Asn Ser Thr		355	360	365
Met His Glu Tyr Lys Ile Gln Gly Leu Ser Ser Leu Thr Thr Tyr Thr		370	375	380
Ile Asp Val Ala Ala Val Thr Ala Val Gly Thr Gly Leu Val Thr Ser	385	390	395	400
Ser Thr Ile Ser Ser Gly Val Pro Pro Asp Leu Pro Gly Ala Pro Ser		405	410	415
Asn Leu Val Ile Ser Asn Ile Ser Pro Arg Ser Ala Thr Leu Gln Phe		420	425	430
Arg Pro Gly Tyr Asp Gly Lys Thr Ser Ile Ser Arg Trp Ile Val Glu		435	440	445
Gly Gln Met Arg Pro Glu Gly Val Gly Leu Pro Ala Glu Val Thr Gln		450	455	460
Pro Ser His Glu Ala Gly Leu Glu Pro Ala Asn Leu Gly Ser Leu Trp	465	470	475	480
Leu Leu Ser Leu Val Tyr Trp Cys Tyr Ser Gln Lys Leu Trp Glu Phe		485	490	495
Ser Cys				

<210> 68

*(Musical notation for the first system of the score)*

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<220>
<221> CDS
<222> (22) .. (1515)
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<400> 68

gtg gcg gcg tac aac ggg gcc ggt ctg ggc gtc ttc agc agg gca gtg Val Ala Ala Tyr Asn Gly Ala Gly Leu Gly Val Phe Ser Arg Ala Val	627
190	200
acc gag tac acc ttg cag gga gtg ccc acc gcg ccc ccg cag aac gtg Thr Glu Tyr Thr Leu Gln Gly Val Pro Thr Ala Pro Pro Gln Asn Val	675
205	215
cag acg gaa gcc gtg aac tcc acc acc att cag ttc ctg tgg aac cct Gln Thr Glu Ala Val Asn Ser Thr Thr Ile Gln Phe Leu Trp Asn Pro	723
220	225
230	
ccg cct cag cag ttt atc aat ggc atc aac cag gga tac aag ctt ctg Pro Pro Gln Gln Phe Ile Asn Gly Ile Asn Gln Gly Tyr Lys Leu Leu	771
235	240
245	250
gca tgg ccg gca gat gcc ccc gag gct gtc act gtg gtc act att gcc Ala Trp Pro Ala Asp Ala Pro Glu Ala Val Thr Val Val Thr Ile Ala	819
255	260
265	
cca gat ttc cac gga gtc cac cat gga cac ata acg aac ctg aag aag Pro Asp Phe His Gly Val His His Gly His Ile Thr Asn Leu Lys Lys	867
270	275
280	
ttt acc gcc tac ttc act tcc gtt ctg tgc ttc acc acc cct ggg gac Phe Thr Ala Tyr Phe Thr Ser Val Leu Cys Phe Thr Thr Pro Gly Asp	915
285	290
295	
ggg cct ccc agc aca cct cag ctg gtc tgg act cag gaa gac aaa cca Gly Pro Pro Ser Thr Pro Gln Leu Val Trp Thr Gln Glu Asp Lys Pro	963
300	305
310	
gga gct gtg gga cat ctg agt ttc aca gag atc ttg gac aca tct ctc Gly Ala Val Gly His Leu Ser Phe Thr Glu Ile Leu Asp Thr Ser Leu	1011
315	320
325	330
aag gtc agc tgg cag gag ccc ctg gag aaa aat ggc atc att act ggc Lys Val Ser Trp Gln Glu Pro Leu Glu Lys Asn Gly Ile Ile Thr Gly	1059
335	340
345	
tat cag atc tct tgg gaa gtg tac ggc agg aac gac tct cgt ctc acg Tyr Gln Ile Ser Trp Glu Val Tyr Gly Arg Asn Asp Ser Arg Leu Thr	1107
350	355
360	
cac acc ctg aac agc acg atg cac gag tac aag atc caa ggc ctc tca His Thr Leu Asn Ser Thr Met His Glu Tyr Lys Ile Gln Gly Leu Ser	1155
365	370
375	
tct ctc acc acc tac acc atc gac gtg gcc gct gtg act gcc gtg ggc Ser Leu Thr Thr Tyr Thr Ile Asp Val Ala Ala Val Thr Ala Val Gly	1203
380	385
390	
act ggc ctg gtg act tca tcc acc att tct tct gga gtg ccc cca gac Thr Gly Leu Val Thr Ser Ser Thr Ile Ser Ser Gly Val Pro Pro Asp	1251
395	400
405	410
ctt cct ggt gcc cca tcc aac ctg gtc att tcc aac atc agc cct cgc	1299



Leu Pro Gly Ala Pro Ser Asn Leu Val Ile Ser Asn Ile Ser Pro Arg  
415 420 425

tcc gcc acc ctt cag ttc cgg cca ggc tat gac ggg aaa acg tcc atc 1347  
Ser Ala Thr Leu Gln Phe Arg Pro Gly Tyr Asp Gly Lys Thr Ser Ile  
430 435 440

tcc agg tgg att gtt gag ggg cag atg aga cct gaa ggt gtt gga tta 1395  
Ser Arg Trp Ile Val Glu Gly Gln Met Arg Pro Glu Gly Val Gly Leu  
445 450 455

cct gcc gag gtc aca cag cca agc cat gaa gcc gga ttg gag cct gca 1443  
Pro Ala Glu Val Thr Gln Pro Ser His Glu Ala Gly Leu Glu Pro Ala  
460 465 470

aac ctc gga agt ctg tgg ctg ctc agc ctg gtg tat tgg tgt tac agc 1491  
Asn Leu Gly Ser Leu Trp Leu Leu Ser Leu Val Tyr Trp Cys Tyr Ser  
475 480 485 490

cag aaa ctt tgg gaa ttc tct tgt tagttgggta gttttactgt aattttctat 1545  
Gln Lys Leu Trp Glu Phe Ser Cys  
495

aaagaattca tatcatctgt taatggcgac agtttttggt tcttcctttg aattttttat 1605

attctttctt tctctttttt gtttcttctt ctttgagtat tttgtaatct tactggggagg 1665

gctaaagcgt cttctatcat atcgaattgg gacaatgata gaagacaatc tttgttttgt 1725

cactctaaag aaattattgt aagattttat catcaggtat gacatttaca ccattgatgt 1785

aggcttttta aaaaatatat ccagcctgta ttgggttaag atgattcttt tctgatcctg 1845

atttctagg agttgggttt ttttttttta aagcataaat aaatttaatt gcatcag 1902

<210> 69  
<211> 498  
<212> PRT  
<213> Homo sapiens

<400> 69  
Met Ala Arg Leu Glu Val Ile Glu Leu Pro His Ser Pro Gln Asn Leu  
1 5 10 15

Leu Val Ser Pro Asn Ser Ser His Ser His Ala Val Val Leu Ser Trp  
20 25 30

Val Arg Pro Phe Asp Gly Asn Ser Pro Ile Leu Tyr Tyr Ile Val Glu  
35 40 45

Leu Ser Glu Asn Asn Ser Pro Trp Lys Val His Leu Ser Asn Val Gly  
50 55 60

Pro Glu Met Thr Gly Val Thr Val Ser Gly Leu Thr Pro Ala Arg Thr  
65 70 75 80

Tyr	Gln	Phe	Arg	Val	Cys	Ala	Val	Asn	Glu	Val	Gly	Arg	Gly	Gln	Tyr
				85					90					95	
Ser	Ala	Glu	Thr	Ser	Arg	Leu	Met	Leu	Pro	Glu	Glu	Pro	Pro	Ser	Ala
			100					105					110		
Pro	Pro	Lys	Asn	Ile	Val	Ala	Ser	Gly	Arg	Thr	Asn	Gln	Ser	Ile	Met
		115					120					125			
Val	Gln	Trp	Gln	Pro	Pro	Pro	Glu	Thr	Glu	His	Asn	Gly	Val	Leu	Arg
	130					135					140				
Gly	Tyr	Ile	Leu	Arg	Tyr	Arg	Leu	Ala	Gly	Leu	Pro	Gly	Glu	Tyr	Gln
145					150					155					160
Gln	Arg	Asn	Ile	Thr	Ser	Pro	Glu	Val	Asn	Tyr	Cys	Leu	Val	Thr	Asp
			165						170					175	
Leu	Ile	Ile	Trp	Thr	Gln	Tyr	Glu	Ile	Gln	Val	Ala	Ala	Tyr	Asn	Gly
			180					185					190		
Ala	Gly	Leu	Gly	Val	Phe	Ser	Arg	Ala	Val	Thr	Glu	Tyr	Thr	Leu	Gln
		195					200					205			
Gly	Val	Pro	Thr	Ala	Pro	Pro	Gln	Asn	Val	Gln	Thr	Glu	Ala	Val	Asn
	210					215					220				
Ser	Thr	Thr	Ile	Gln	Phe	Leu	Trp	Asn	Pro	Pro	Pro	Gln	Gln	Phe	Ile
225					230					235					240
Asn	Gly	Ile	Asn	Gln	Gly	Tyr	Lys	Leu	Leu	Ala	Trp	Pro	Ala	Asp	Ala
			245						250					255	
Pro	Glu	Ala	Val	Thr	Val	Val	Thr	Ile	Ala	Pro	Asp	Phe	His	Gly	Val
			260					265					270		
His	His	Gly	His	Ile	Thr	Asn	Leu	Lys	Lys	Phe	Thr	Ala	Tyr	Phe	Thr
		275					280					285			
Ser	Val	Leu	Cys	Phe	Thr	Thr	Pro	Gly	Asp	Gly	Pro	Pro	Ser	Thr	Pro
	290					295					300				
Gln	Leu	Val	Trp	Thr	Gln	Glu	Asp	Lys	Pro	Gly	Ala	Val	Gly	His	Leu
305					310						315				320
Ser	Phe	Thr	Glu	Ile	Leu	Asp	Thr	Ser	Leu	Lys	Val	Ser	Trp	Gln	Glu
				325					330					335	
Pro	Leu	Glu	Lys	Asn	Gly	Ile	Ile	Thr	Gly	Tyr	Gln	Ile	Ser	Trp	Glu
			340					345					350		
Val	Tyr	Gly	Arg	Asn	Asp	Ser	Arg	Leu	Thr	His	Thr	Leu	Asn	Ser	Thr
		355					360					365			
Thr	His	Glu	Tyr	Lys	Ile	Gln	Gly	Leu	Ser	Ser	Leu	Thr	Thr	Tyr	Thr
						375					380				

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Ser Thr Ile Ser Ser Gly Val Pro Pro Asp Leu Pro Gly Ala Pro Ser  
405 410 415

Asn Leu Val Ile Ser Asn Ile Ser Pro Arg Ser Ala Thr Leu Gln Phe  
420 425 430

Arg Pro Gly Tyr Asp Gly Lys Thr Ser Ile Ser Arg Trp Ile Val Glu  
435 440 445

Gly Gln Met Arg His Gln Gly Val Gly Leu Pro Ala Glu Val Thr Gln  
450 455 460

Pro	Ser	His	Glu	Ala	Gly	Leu	Glu	Pro	Ala	Asn	Leu	Gly	Ser	Leu	Trp
465					470					475					480

Leu Leu Ser Leu Val Tyr Trp Cys Tyr Ser Gln Lys Leu Trp Glu Phe  
485 490 495

Ser Cys

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<210> 70
<211> 1902
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> (22)..(1515)
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<400> 70
gaaggaggga atgactccag g atg gcc cgg ctg gaa gtg att gaa ctg cct 51
                      Met Ala Arg Leu Glu Val Ile Glu Leu Pro
                      1                      5                      10

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cat tca cct cag aac ctc ctg gtc agc cct aat tct tcc cac agc cac 99  
His Ser Pro Gln Asn Leu Leu Val Ser Pro Asn Ser Ser His Ser His  
15 20 25

gcc gtg gtg ctc tct tgg gtc cgg ccc ttt gat gga aac agt cct att 147  
Ala Val Val Leu Ser Trp Val Arg Pro Phe Asp Gly Asn Ser Pro Ile  
30 35 40

c t t   t a t   t a c   a t c   g t g   g a g   c t g   t c t   g a a   a a c   a a c   t c t   c c a   t g g   a a g   g t g   195  
Leu Tyr Tyr Ile Val Glu Leu Ser Glu Asn Asn Ser Pro Trp Lys Val

45                      50                      55

cat ctg tca aac gtt ggc cct gag atg aca ggc gtc acc gtg agt ggc 243  
His Leu Ser Asn Val Gly Pro Glu Met Thr Gly Val Thr Val Ser Gly  
60 65 70

ctg act ccg gct cgt acc tat caa ttc cgg gtg tgc gcg gtg aat gaa 291  
Leu Thr Pro Ala Arg Thr Tyr Gln Phe Arg Val Cys Ala Val Asn Glu

75	80	85	90	
gtg ggc agg ggc cag tac agt gcc gag aca agc agg ttg atg cta cct				339
Val Gly Arg Gly Gln Tyr Ser Ala Glu Thr Ser Arg Leu Met Leu Pro	95	100	105	
gaa gaa cca ccc agt gct ccc ccg aaa aat ata gtg gcc agt ggg cgg				387
Glu Glu Pro Pro Ser Ala Pro Pro Lys Asn Ile Val Ala Ser Gly Arg	110	115	120	
act aat cag tcc att atg gtc cag tgg cag cca ccc cca gaa aca gag				435
Thr Asn Gln Ser Ile Met Val Gln Trp Gln Pro Pro Pro Glu Thr Glu	125	130	135	
cac aac ggg gtg ttg cgt gga tac atc ctc agg tac cgc ctg gct ggc				483
His Asn Gly Val Leu Arg Gly Tyr Ile Leu Arg Tyr Arg Leu Ala Gly	140	145	150	
ctt ccc gga gag tac cag cag cgg aac atc acc agc ccg gag gtg aac				531
Leu Pro Gly Glu Tyr Gln Gln Arg Asn Ile Thr Ser Pro Glu Val Asn	155	160	165	170
tac tgc ctg gtg aca gac ctg atc atc tgg aca cag tat gag ata cag				579
Tyr Cys Leu Val Thr Asp Leu Ile Ile Trp Thr Gln Tyr Glu Ile Gln	175	180	185	
gtg gcg gcg tac aac ggg gcc ggt ctg ggc gtc ttc agc agg gca gtg				627
Val Ala Ala Tyr Asn Gly Ala Gly Leu Gly Val Phe Ser Arg Ala Val	190	195	200	
acc gag tac acc ttg cag gga gtg ccc acc gcg ccc ccg cag aac gtg				675
Thr Glu Tyr Thr Leu Gln Gly Val Pro Thr Ala Pro Pro Gln Asn Val	205	210	215	
cag acg gaa gcc gtg aac tcc acc acc att cag ttc ctg tgg aac cct				723
Gln Thr Glu Ala Val Asn Ser Thr Thr Ile Gln Phe Leu Trp Asn Pro	220	225	230	
ccg cct cag cag ttt atc aat ggc atc aac cag gga tac aag ctt ctg				771
Pro Pro Gln Gln Phe Ile Asn Gly Ile Asn Gln Gly Tyr Lys Leu Leu	235	240	245	250
gca tgg ccg gca gat gcc ccc gag gct gtc act gtg gtc act att gcc				819
Ala Trp Pro Ala Asp Ala Pro Glu Ala Val Thr Val Val Thr Ile Ala	255	260	265	
cca gat ttc cac gga gtc cac cat gga cac ata acg aac ctg aag aag				867
Pro Asp Phe His Gly Val His His Gly His Ile Thr Asn Leu Lys Lys	270	275	280	
ttt acc gcc tac ttc act tcc gtt ctg tgc ttc acc acc cct ggg gac				915
Phe Thr Ala Tyr Phe Thr Ser Val Leu Cys Phe Thr Thr Pro Gly Asp	285	290	295	
ggg cct ccc agc aca cct cag ctg gtc tgg act cag gaa gac aaa cca				963
Gly Pro Pro Ser Thr Pro Gln Leu Val Trp Thr Gln Glu Asp Lys Pro	300	305	310	

gga gct gtg gga cat ctg agt ttc aca gag atc ttg gac aca tct ctc 1011  
 Gly Ala Val Gly His Leu Ser Phe Thr Glu Ile Leu Asp Thr Ser Leu  
 315 320 325 330

aag gtc agc tgg cag gag ccc ctg gag aaa aat ggc atc att act ggc 1059  
 Lys Val Ser Trp Gln Glu Pro Leu Glu Lys Asn Gly Ile Ile Thr Gly  
 335 340 345

tat cag atc tct tgg gaa gtg tac ggc agg aac gac tct cgt ctc acg 1107  
 Tyr Gln Ile Ser Trp Glu Val Tyr Gly Arg Asn Asp Ser Arg Leu Thr  
 350 355 360

cac acc ctg aac agc acg acg cac gag tac aag atc caa ggc ctc tca 1155  
 His Thr Leu Asn Ser Thr Thr His Glu Tyr Lys Ile Gln Gly Leu Ser  
 365 370 375

tct ctc acc acc tac acc atc gac gtg gcc gct gtg act gcc gtg ggc 1203  
 Ser Leu Thr Thr Tyr Thr Ile Asp Val Ala Ala Val Thr Ala Val Gly  
 380 385 390

act ggc ctg gtg act tca tcc acc att tct tct gga gtg ccc cca gac 1251  
 Thr Gly Leu Val Thr Ser Ser Thr Ile Ser Ser Gly Val Pro Pro Asp  
 395 400 405 410

ctt cct ggt gcc cca tcc aac ctg gtc att tcc aac atc agc cct cgc 1299  
 Leu Pro Gly Ala Pro Ser Asn Leu Val Ile Ser Asn Ile Ser Pro Arg  
 415 420 425

tcc gcc acc ctt cag ttc cgg cca ggc tat gac ggg aaa acg tcc atc 1347  
 Ser Ala Thr Leu Gln Phe Arg Pro Gly Tyr Asp Gly Lys Thr Ser Ile  
 430 435 440

tcc agg tgg att gtt gag ggg cag atg aga cat caa ggt gtt gga tta 1395  
 Ser Arg Trp Ile Val Glu Gly Gln Met Arg His Gln Gly Val Gly Leu  
 445 450 455

cct gcc gag gtc aca cag cca agc cat gaa gcc gga ttg gag cct gca 1443  
 Pro Ala Glu Val Thr Gln Pro Ser His Glu Ala Gly Leu Glu Pro Ala  
 460 465 470

aac ctc gga agt ctg tgg ctg ctc agc ctg gtg tat tgg tgt tac agc 1491  
 Asn Leu Gly Ser Leu Trp Leu Leu Ser Leu Val Tyr Trp Cys Tyr Ser  
 475 480 485 490

cag aaa ctt tgg gaa ttc tct tgt tagttgggta gttttactgt aattttctat 1545  
 Gln Lys Leu Trp Glu Phe Ser Cys  
 495

aaagaattca tatcatctgt taatggcgac agtttttggtt tcttcctttg aattttttat 1605

attctttctt tctctttttt gtttcttctt ctttgagtat tttgtaatct tactgggagg 1665

gctaaagcgt cttctatcat atcgaattgg gacaatgata gaagacaatc tttgttttgt 1725

cactctaaag aaattattgt aagattttat catcagggtat gacatttaca ccattgatgt 1785



245

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<212> DNA  
<213> Homo sapiens

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acgctg atg ccc gtg cag ctg tct gag cac ccg gaa tgg aat gag tct 168  
Met Pro Val Gln Leu Ser Glu His Pro Glu Trp Asn Glu Ser  
1 5 10  
atg cac tcc ctc cgg atc agt gtg ggg ggc ctt cct gtg ctg gcg tcc 216  
Met His Ser Leu Arg Ile Ser Val Gly Gly Leu Pro Val Leu Ala Ser  
15 20 25 30  
atg acc aag gcc gcg gac ccc cgc ttc cgc ccc cgc tgg aag gtg atc 264  
Met Thr Lys Ala Ala Asp Pro Arg Phe Arg Pro Arg Trp Lys Val Ile  
35 40 45  
ctg acg ttc ttt gtg ggt gct gcc atc ctc tgg ctg ctc tgc tcc cac 312  
Leu Thr Phe Phe Val Gly Ala Ala Ile Leu Trp Leu Leu Cys Ser His  
50 55 60  
cgc ccg gcc ccc ggc agg ccc ccc acc cac aat gca cac aac tgg agg 360  
Arg Pro Ala Pro Gly Arg Pro Pro Thr His Asn Ala His Asn Trp Arg  
65 70 75  
ctc ggc cag gcg ccc gcc aac tgg tac aat gac acc tac ccc ctg tct 408  
Leu Gly Gln Ala Pro Ala Asn Trp Tyr Asn Asp Thr Tyr Pro Leu Ser  
80 85 90  
ccc cca caa agg aca ccg gct ggg att cgg tat cga atc gca gtt atc 456  
Pro Pro Gln Arg Thr Pro Ala Gly Ile Arg Tyr Arg Ile Ala Val Ile  
95 100 105 110  
gca gac ctg gac aca gag tca agg gcc caa gag gaa aac acc tgg ttc 504  
Ala Asp Leu Asp Thr Glu Ser Arg Ala Gln Glu Glu Asn Thr Trp Phe  
115 120 125  
agt tac ctg aaa aag ggc tac ctg acc ctg tca gac agt ggg gac aag 552  
Ser Tyr Leu Lys Lys Gly Tyr Leu Thr Leu Ser Asp Ser Gly Asp Lys  
130 135 140  
gtg gcc gtg gaa tgg gac aaa gac cat ggg gtc ctg gag tcc cac ctg 600  
Val Ala Val Glu Trp Asp Lys Asp His Gly Val Leu Glu Ser His Leu  
145 150 155

gcg gag aag ggg aga ggc atg gag cta tcc gac ctg att gtt ttc aat 648  
Ala Glu Lys Gly Arg Gly Met Glu Leu Ser Asp Leu Ile Val Phe Asn  
160 165 170

ggg aaa ctc tac tcc gtg gat gac cgg acg ggg gtc gtc tac cag atc 696  
Gly Lys Leu Tyr Ser Val Asp Asp Arg Thr Gly Val Val Tyr Gln Ile  
175 180 185 190

gaa ggc agc aaa gcc gtg ccc tgg gtg att ctg tcc gac ggc gac ggc 744  
Glu Gly Ser Lys Ala Val Pro Trp Val Ile Leu Ser Asp Gly Asp Gly  
195 200 205

acc gtg gag aaa ggc ttc aag gcc gaa tgg ctg gca gtg cgg gag att 792  
Thr Val Glu Lys Gly Phe Lys Ala Glu Trp Leu Ala Val Arg Glu Ile  
210 215 220

gta agg aag cgg tgg cgg ctg gtg aag caa gtc tca cat gtc ggc gtt 840  
Val Arg Lys Arg Trp Arg Leu Val Lys Gln Val Ser His Val Gly Val  
225 230 235

ctt ggc caa tgg ata caa aga taaagaaaat gttgcctttt tctaggaact 891  
Leu Gly Gln Trp Ile Gln Arg  
240 245

gtcagaaatc ctcatgcctt tcaagacttc tgtgaatgac ttgaattttt tattccctgc 951

ctaggggtctg tgaacgaggc ctgtctcttc cctgggggttt ctttccatgg cttttatttc 1011

tcctcttcca gtgggagttt tgcaggctct tctctgtgga aacttcacga gcgttggtctg 1071

ggcctcggct tcgctggagt gtactccagg gtgaaggcag agtgggattt gagaccacag 1131

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tcaccgggca tagcctggaa gcccacagtc tgttctgact ttgcctggct gtctccttga 1251

cccgcctcct agatcattgt ccttgatgac caggctgggt catttaaaat agagatgcaa 1311

tcaggaaggt tgggggactt gggactgtgg ctgaattgag accttgctga tgtattcatg 1371

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gcgattactt taaagctcac cttttttctt cccctctctg ttcgctgctg tcagcataat 1491

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<210> 73

<211> 352

<212> PRT

<213> Homo sapiens

<400> 73

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Thr Thr Ser Val Val Thr Ala Ala Leu Tyr Ser Val Tyr Arg Gln Lys





325 330 335

Pro Ile Cys Arg Gln Ala Ile Thr Arg Val Ile Pro Pro Tyr Asn Ser  
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<210> 74  
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 Met Glu Ser Gly  
 1

ggg cgg ccc tcg ctg tgc cag ttc atc ctc ctg ggc acc acc tct gtg 162  
 Gly Arg Pro Ser Leu Cys Gln Phe Ile Leu Leu Gly Thr Thr Ser Val  
 5 10 15 20

gtc acc gcc gcc ctg tac tcc gtg tac cgg cag aag gcc cgg gtc tcc 210  
 Val Thr Ala Ala Leu Tyr Ser Val Tyr Arg Gln Lys Ala Arg Val Ser  
 25 30 35

caa gag ctc aag gga gct aaa aaa gtt cat ttg ggt gaa gat tta aag 258  
 Gln Glu Leu Lys Gly Ala Lys Lys Val His Leu Gly Glu Asp Leu Lys  
 40 45 50

agt att ctt tca gaa gct cca gga aaa tgc gtg cct tat gct gtt ata 306  
 Ser Ile Leu Ser Glu Ala Pro Gly Lys Cys Val Pro Tyr Ala Val Ile  
 55 60 65

gaa gga gct gtg cgg tct gtt aaa gaa acg ctt aac agc cag ttt gtg 354  
 Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn Ser Gln Phe Val  
 70 75 80

gaa aac tgc aag ggg gta att cag cgg ctg aca ctt cag gag cac aag 402  
 Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu Gln Glu His Lys  
 85 90 95 100

atg gtg tgg aat cga acc acc cac ctt tgg aat gat tgc tca aag atc 450  
 Met Val Trp Asn Arg Thr Thr His Leu Trp Asn Asp Cys Ser Lys Ile  
 105 110 115

att cat cag agg acc aac aca gtg ccc ttt gac ctg gtg ccc cac gag 498  
 Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu Val Pro His Glu  
 120 125 130

gat ggc gtg gat gtg gct gtg cga gtg ctg aag ccc ctg gac tca gtg 546  
 Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro Leu Asp Ser Val  
 135 140 145





Tyr Ala Val Ile Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn  
 65 70 75 80  
 Ser Gln Phe Val Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu  
 85 90 95  
 Gln Glu His Lys Met Val Trp Asn Arg Thr Thr His Leu Trp Asn Asp  
 100 105 110  
 Cys Ser Lys Ile Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu  
 115 120 125  
 Val Pro His Glu Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro  
 130 135 140  
 Leu Asp Ser Val Asp Leu Gly Leu Glu Thr Val Tyr Glu Lys Phe His  
 145 150 155 160  
 Pro Ser Ile Gln Ser Phe Thr Asp Val Ile Gly His Tyr Ile Ser Gly  
 165 170 175  
 Glu Arg Pro Lys Gly Ile Gln Glu Thr Glu Glu Met Leu Lys Val Gly  
 180 185 190  
 Ala Thr Leu Thr Gly Val Gly Glu Leu Val Leu Asp Asn Asn Ser Val  
 195 200 205  
 Arg Leu Gln Pro Pro Lys Gln Gly Met Gln Tyr Tyr Leu Ser Ser Gln  
 210 215 220  
 Asp Phe Asp Ser Leu Leu Gln Arg Gln Glu Ser Ser Val Arg Leu Trp  
 225 230 235 240  
 Lys Val Leu Ala Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe  
 245 250 255  
 Phe Ile Leu Arg Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu  
 260 265 270  
 Lys Gln Met Gln Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser  
 275 280 285  
 Arg Ala Lys Pro Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val  
 290 295 300  
 Cys Leu Ser Ser Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val  
 305 310 315 320  
 Cys Ser Cys Thr Glu Cys Tyr Arg Ala Leu Pro Glu Pro Lys Lys Cys  
 325 330 335  
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 340 345 350

<210> 76  
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ggg gtt ggc gaa ctg gtc ctg gac aac aac tct gtc cgc ctg cag ccg 738  
 Gly Val Gly Glu Leu Val Leu Asp Asn Asn Ser Val Arg Leu Gln Pro  
 200 205 210

ccc aaa caa ggc atg cag tac tat cta agc agc cag gac ttc gac agc 786  
 Pro Lys Gln Gly Met Gln Tyr Tyr Leu Ser Ser Gln Asp Phe Asp Ser  
 215 220 225

ctg ctg cag agg cag gag tgc agc gtc agg ctc tgg aag gtg ctg gcg 834  
 Leu Leu Gln Arg Gln Glu Ser Ser Val Arg Leu Trp Lys Val Leu Ala  
 230 235 240

ctg gtt ttt ggc ttt gcc aca tgt gcc acc ctc ttc ttc att ctc cgg 882  
 Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe Phe Ile Leu Arg  
 245 250 255 260

aag cag tat ctg cag cgg cag gag cgc ctg cgc ctc aag cag atg cag 930  
 Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu Lys Gln Met Gln  
 265 270 275

gag gag ttc cag gag cat gag gcc cag ctg ctg agc cga gcc aag cct 978  
 Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser Arg Ala Lys Pro  
 280 285 290

gag gac agg gag agt ctg aag agc gcc tgt gta gtg tgt ctg agc agc 1026  
 Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val Cys Leu Ser Ser  
 295 300 305

ttc aag tcc tgc gtc ttt ctg gag tgt ggg cac gtt tgt tcc tgc acc 1074  
 Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val Cys Ser Cys Thr  
 310 315 320

gag tgc tac cgc gcc ttg cca gag ccc aag aag tgc cct atc tgc aga 1122  
 Glu Cys Tyr Arg Ala Leu Pro Glu Pro Lys Lys Cys Pro Ile Cys Arg  
 325 330 335 340

cag gcg atc acc cgg gtg ata ccc ctg tac aac agc taatagtttg 1168  
 Gln Ala Ile Thr Arg Val Ile Pro Leu Tyr Asn Ser  
 345 350

gaagccgcac agcttgacct ggaagcacc ctgccccctt ttcagggatt tttatctcga 1228

ggccctttgga ggagcagtgg tgggggtagc tgtcacctcc aggtatgatt gagggaggaa 1288

tcgggtagaa actctccaga cccatgcctc caatggcagg atgtctgcctt tcccacctga 1348

gaggggaccc tgtccatgtg cagcctcatc agagcctcac cctgggagga tgccgtggcg 1408

tctcctccca ggagccagat cagtgcgagt gtgactgaaa atgcctcatc acttaagcac 1468

caaagccagt gatcagcagc tttctgttct ctgtgtcttc tgtttttttc tggatgaatcg 1528





Ser Phe Lys Asn Asp Val Lys Glu Glu Ser Thr Lys Tyr Leu Leu Leu  
115 120 125

Thr Ser Ile Val Leu Arg Ile Leu Cys Ser Leu Val Glu Arg Ile Ser  
130 135 140

Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Thr Val Glu Phe Leu  
145 150 155 160

Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu Val Glu Lys  
165 170 175

Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met Leu Ile Ile  
180 185 190

Asp Leu Arg Met Lys Ser Phe Leu Ala Ile Pro Asn Leu Val Ile Phe  
195 200 205

Ala Val Leu Leu Phe Phe Ser Ser Leu Glu Thr Pro Lys Asn Pro Ile  
210 215 220

Ala Phe Ala Cys Phe Phe Ile Cys Leu Ile Thr Asp Pro Phe Leu Asp  
225 230 235 240

Ile Tyr Phe Ser Gly Leu Ser Val Thr Glu Arg Trp Lys Pro Phe Leu  
245 250 255

Tyr Arg Gly Arg Ile Cys Arg Arg Leu Ser Val Val Phe Ala Gly Met  
260 265 270

Ile Glu Leu Thr Phe Phe Ile Leu Ser Ala Phe Lys Leu Arg Asp Thr  
275 280 285

His Leu Trp Tyr Phe Val Ile Pro Gly Phe Ser Ile Phe Gly Ile Phe  
290 295 300

Trp Met Ile Cys His Ile Ile Phe Leu Leu Thr Leu Trp Gly Phe His  
305 310 315 320

Thr Lys Leu Asn Asp Cys His Lys Val Tyr Phe Thr His Arg Thr Asp  
325 330 335

Tyr Asn Ser Leu Asp Arg Ile Met Ala Ser Lys Gly Met Arg His Phe  
340 345 350

Cys Leu Ile Ser Glu Gln Leu Val Phe Phe Ser Leu Leu Ala Thr Ala  
355 360 365

Ile Leu Gly Ala Val Ser Trp Gln Pro Thr Asn Gly Ile Phe Leu Ser  
370 375 380

Met Phe Leu Ile Val Leu Pro Leu Glu Ser Met Ala His Gly Leu Phe  
385 390 395 400

His Glu Leu Gly Asn Cys Leu Gly Gly Thr Ser Val Gly Tyr Ala Ile  
405 410 415

Val	Ile	Pro	Thr	Asn	Phe	Cys	Ser	Pro	Asp	Gly	Gln	Pro	Thr	Leu	Leu
			420					425					430		
Pro	Pro	Glu	His	Val	Gln	Glu	Leu	Asn	Leu	Arg	Ser	Thr	Gly	Met	Leu
		435					440					445			
Asn	Ala	Ile	Gln	Arg	Phe	Phe	Ala	Tyr	His	Met	Ile	Glu	Thr	Tyr	Gly
	450					455					460				
Cys	Asp	Tyr	Ser	Thr	Ser	Gly	Leu	Ser	Phe	Asp	Thr	Leu	His	Ser	Lys
465					470					475					480
Leu	Lys	Ala	Phe	Leu	Glu	Leu	Arg	Thr	Val	Asp	Gly	Pro	Arg	His	Asp
				485					490					495	
Thr	Tyr	Ile	Leu	Tyr	Tyr	Ser	Gly	His	Thr	His	Gly	Thr	Gly	Glu	Trp
			500					505					510		
Ala	Leu	Ala	Gly	Gly	Asp	Thr	Leu	Arg	Leu	Asp	Thr	Leu	Ile	Glu	Trp
		515					520					525			
Trp	Arg	Glu	Lys	Asn	Gly	Ser	Phe	Cys	Ser	Arg	Leu	Ile	Ile	Val	Leu
	530					535					540				
Asp	Ser	Glu	Asn	Ser	Thr	Pro	Trp	Val	Lys	Glu	Val	Arg	Lys	Ile	Asn
545					550					555					560
Asp	Gln	Tyr	Ile	Ala	Val	Gln	Gly	Ala	Glu	Leu	Ile	Lys	Thr	Val	Asp
				565					570					575	
Ile	Glu	Glu	Ala	Asp	Pro	Pro	Gln	Leu	Gly	Asp	Phe	Thr	Lys	Asp	Trp
			580					585					590		
Val	Glu	Tyr	Asn	Cys	Asn	Ser	Ser	Asn	Asn	Ile	Cys	Trp	Thr	Glu	Lys
		595					600					605			
Gly	Arg	Thr	Val	Lys	Ala	Val	Tyr	Gly	Val	Ser	Lys	Arg	Trp	Ser	Asp
	610					615					620				
Tyr	Thr	Leu	His	Leu	Pro	Thr	Gly	Ser	Asp	Val	Ala	Lys	His	Trp	Met
625					630					635					640
Leu	His	Phe	Pro	Arg	Ile	Thr	Tyr	Pro	Leu	Val	His	Leu	Ala	Asn	Trp
				645					650					655	
Leu	Cys	Gly	Leu	Asn	Leu	Phe	Trp	Ile	Cys	Lys	Thr	Cys	Phe	Arg	Cys
			660					665					670		
Leu	Lys	Arg	Leu	Lys	Met	Ser	Trp	Phe	Leu	Pro	Thr	Val	Leu	Asp	Thr
		675					680					685			
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ggcgtgccgc ctccctgttc tcagtcgcag gctgaagcct tgtctgtctt cctccttttt 180  
ggtttggttt tggaactgac tccgaggggtt gggagagcgc gttggtggcg acggccgagt 240  
cagatcacta taaacaaaat ttccacaaga gaaaatgttg aaataggagt tgcggataca 300  
ttggatatac tggatgaaat acaagcgggtt aatttttgta acgtgaggga aaagcccaca 360  
ttgctgggta c atg tgt aaa tca ctg cgt tat tgc ttt agt cat tgt ctc 410  
Met Cys Lys Ser Leu Arg Tyr Cys Phe Ser His Cys Leu  
1 5 10  
tat tta gca atg aca aga ctg gaa gaa gta aat aga gaa gtg aac atg 458  
Tyr Leu Ala Met Thr Arg Leu Glu Glu Val Asn Arg Glu Val Asn Met  
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cat tct tca gtg cgg tat ctt ggc tat tta gcc aga atc aat tta ttg 506  
His Ser Ser Val Arg Tyr Leu Gly Tyr Leu Ala Arg Ile Asn Leu Leu  
30 35 40 45  
gtt gct ata tgc tta ggt cta tac gta aga tgg gaa aaa aca gca aat 554  
Val Ala Ile Cys Leu Gly Leu Tyr Val Arg Trp Glu Lys Thr Ala Asn  
50 55 60  
tcc tta att ttg gta att ttt att ctt ggt ctt ttt gtt ctt gga atc 602  
Ser Leu Ile Leu Val Ile Phe Ile Leu Gly Leu Phe Val Leu Gly Ile  
65 70 75  
gcc agc ata ctc tat tac tat ttt tca atg gaa gca gca agt tta agt 650  
Ala Ser Ile Leu Tyr Tyr Tyr Phe Ser Met Glu Ala Ala Ser Leu Ser  
80 85 90  
ctc tcc aat ctt tgg ttt gga ttc ttg ctt ggc ctc cta tgt ttt ctt 698  
Leu Ser Asn Leu Trp Phe Gly Phe Leu Leu Gly Leu Leu Cys Phe Leu  
95 100 105  
gat aat tca tcc ttt aaa aat gat gta aaa gaa gaa tca acc aaa tat 746  
Asp Asn Ser Ser Phe Lys Asn Asp Val Lys Glu Glu Ser Thr Lys Tyr  
110 115 120 125  
ttg ctt cta aca tcc ata gtg tta agg ata ttg tgc tct ctg gtg gag 794  
Leu Leu Leu Thr Ser Ile Val Leu Arg Ile Leu Cys Ser Leu Val Glu  
130 135 140

aga att tct ggt tat gtc cgt cat cgg ccc act tta cta acc aca gtt	842
Arg Ile Ser Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Val	
145 150 155	
gaa ttt ctg gag ctt gtt gga ttt gcc att gcc agc aca act atg ttg	890
Glu Phe Leu Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu	
160 165 170	
gtg gag aag tct ctg agt gtc att ttg ctt gtt gta gct ctg gct atg	938
Val Glu Lys Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met	
175 180 185	
ctg att att gat ctg aga atg aaa tct ttc tta gct att cca aac tta	986
Leu Ile Ile Asp Leu Arg Met Lys Ser Phe Leu Ala Ile Pro Asn Leu	
190 195 200 205	
gtt att ttt gca gtt ttg tta ttt ttt tcc tca ttg gaa act ccc aaa	1034
Val Ile Phe Ala Val Leu Leu Phe Phe Ser Ser Leu Glu Thr Pro Lys	
210 215 220	
aat ccg att gct ttt gcg tgt ttt ttt att tgc ctg ata act gat cct	1082
Asn Pro Ile Ala Phe Ala Cys Phe Phe Ile Cys Leu Ile Thr Asp Pro	
225 230 235	
ttc ctt gac att tat ttt agt gga ctt tca gta act gaa aga tgg aaa	1130
Phe Leu Asp Ile Tyr Phe Ser Gly Leu Ser Val Thr Glu Arg Trp Lys	
240 245 250	
ccc ttt ttg tac cgt gga aga att tgc aga aga ctt tca gtc gtt ttt	1178
Pro Phe Leu Tyr Arg Gly Arg Ile Cys Arg Arg Leu Ser Val Val Phe	
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gct gga atg att gag ctt aca ttt ttt att ctt tcc gca ttc aaa ctt	1226
Ala Gly Met Ile Glu Leu Thr Phe Phe Ile Leu Ser Ala Phe Lys Leu	
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Arg Asp Thr His Leu Trp Tyr Phe Val Ile Pro Gly Phe Ser Ile Phe	
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Gly Ile Phe Trp Met Ile Cys His Ile Ile Phe Leu Leu Thr Leu Trp	
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Gly Phe His Thr Lys Leu Asn Asp Cys His Lys Val Tyr Phe Thr His	
320 325 330	
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Arg Thr Asp Tyr Asn Ser Leu Asp Arg Ile Met Ala Ser Lys Gly Met	
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Arg His Phe Cys Leu Ile Ser Glu Gln Leu Val Phe Phe Ser Leu Leu	
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Phe	Leu	Ser	Met	Phe	Leu	Ile	Val	Leu	Pro	Leu	Glu	Ser	Met	Ala	His	
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Gly	Leu	Phe	His	Glu	Leu	Gly	Asn	Cys	Leu	Gly	Gly	Thr	Ser	Val	Gly	
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Tyr	Ala	Ile	Val	Ile	Pro	Thr	Asn	Phe	Cys	Ser	Pro	Asp	Gly	Gln	Pro	
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aca	ctg	ctt	ccc	cca	gaa	cat	gta	cag	gag	tta	aat	ttg	agg	tct	act	1706
Thr	Leu	Leu	Pro	Pro	Glu	His	Val	Gln	Glu	Leu	Asn	Leu	Arg	Ser	Thr	
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ggc	atg	ctc	aat	gct	atc	caa	aga	ttt	ttt	gca	tat	cat	atg	att	gag	1754
Gly	Met	Leu	Asn	Ala	Ile	Gln	Arg	Phe	Phe	Ala	Tyr	His	Met	Ile	Glu	
				450					455					460		
acc	tat	gga	tgt	gac	tat	tcc	aca	agt	gga	ctg	tca	ttt	gat	act	ctg	1802
Thr	Tyr	Gly	Cys	Asp	Tyr	Ser	Thr	Ser	Gly	Leu	Ser	Phe	Asp	Thr	Leu	
			465					470					475			
cat	tcc	aaa	cta	aaa	gct	ttc	ctc	gaa	ctt	cgg	aca	gtg	gat	gga	ccc	1850
His	Ser	Lys	Leu	Lys	Ala	Phe	Leu	Glu	Leu	Arg	Thr	Val	Asp	Gly	Pro	
		480					485					490				
aga	cat	gat	acg	tat	att	ttg	tat	tac	agt	ggg	cac	acc	cat	ggg	aca	1898
Arg	His	Asp	Thr	Tyr	Ile	Leu	Tyr	Tyr	Ser	Gly	His	Thr	His	Gly	Thr	
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gga	gag	tgg	gct	cta	gca	ggg	gga	gat	aca	cta	cgc	ctt	gac	aca	ctt	1946
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Ile	Glu	Trp	Trp	Arg	Glu	Lys	Asn	Gly	Ser	Phe	Cys	Ser	Arg	Leu	Ile	
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Lys	Ile	Asn	Asp	Gln	Tyr	Ile	Ala	Val	Gln	Gly	Ala	Glu	Leu	Ile	Lys	
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Thr	Val	Asp	Ile	Glu	Glu	Ala	Asp	Pro	Pro	Gln</						

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tgg agt gac tac act ctg cat ttg cca acg gga agc gat gtg gcc aag 2282  
 Trp Ser Asp Tyr Thr Leu His Leu Pro Thr Gly Ser Asp Val Ala Lys  
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cac tgg atg tta cac ttt cct cgt att aca tat ccc cta gtg cat ttg 2330  
 His Trp Met Leu His Phe Pro Arg Ile Thr Tyr Pro Leu Val His Leu  
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gca aat tgg tta tgc ggt ctg aac ctt ttt tgg atc tgc aaa act tgt 2378  
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 655 660 665

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 Phe Arg Cys Leu Lys Arg Leu Lys Met Ser Trp Phe Leu Pro Thr Val  
 670 675 680 685

ctg gac aca gga caa ggc ttc aaa ctt gtc aaa tct taatttggac 2472  
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 690 695

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gtatgctgta tttttatttg tggaaaatac cttgctactt ctgtagctgc tctcactttg 2592

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gtagaccaga taaatttggt tactgtttta agaaaactac cagtttactt acagaagatt 2892

cttttttcca aacagtaggt ttcatccaag accatttgaa gaactgcaaa ctctttctct 2952

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 Ile Leu Cys Ser Leu Val Glu Arg Ile Ser Gly Tyr Val Arg His Arg  
 50 55 60  
 Pro Thr Leu Leu Thr Thr Val Glu Phe Leu Glu Leu Val Gly Phe Ala  
 65 70 75 80  
 Ile Ala Ser Thr Thr Met Leu Val Glu Lys Ser Leu Ser Val Ile Leu  
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 100 105 110  
 Phe Leu Ala Ile Pro Asn Leu Val Ile Phe Ala Val Leu Leu Phe Phe  
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 Ser Ser Leu Glu Thr Pro Lys Asn Pro Ile Ala Phe Ala Cys Phe Phe  
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 Ser Val Thr Glu Arg Trp Lys Pro Phe Leu Tyr Arg Gly Arg Ile Cys  
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 275 280 285  
 Trp Gln Pro Thr Asn Gly Ile Phe Leu Ser Met Phe Leu Ile Val Leu  
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 305 310 315 320  
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 325 330 335

Cys Ser Pro Asp Gly Gln Pro Thr Leu Leu Pro Pro Glu His Val Gln  
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 Phe Ala Tyr His Met Ile Glu Thr Tyr Gly Cys Asp Tyr Ser Thr Ser  
 370 375 380  
 Gly Leu Ser Phe Asp Thr Leu His Ser Lys Leu Lys Ala Phe Leu Glu  
 385 390 395 400  
 Leu Arg Thr Val Asp Gly Pro Arg His Asp Thr Tyr Ile Leu Tyr Tyr  
 405 410 415  
 Ser Gly His Thr His Gly Thr Gly Glu Trp Ala Leu Ala Gly Gly Asp  
 420 425 430  
 Thr Leu Arg Leu Asp Thr Leu Ile Glu Trp Trp Arg Glu Lys Asn Gly  
 435 440 445  
 Ser Phe Cys Ser Arg Leu Ile Ile Val Leu Asp Ser Glu Asn Ser Thr  
 450 455 460  
 Pro Trp Val Lys Glu Val Arg Lys Ile Asn Asp Gln Tyr Ile Ala Val  
 465 470 475 480  
 Gln Gly Ala Glu Leu Ile Lys Thr Val Asp Ile Glu Glu Ala Asp Pro  
 485 490 495  
 Pro Gln Leu Gly Asp Phe Thr Lys Asp Trp Val Glu Tyr Asn Cys Asn  
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 Ser Ser Asn Asn Ile Cys Trp Thr Glu Lys Gly Arg Thr Val Lys Ala  
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 Val Tyr Gly Val Ser Lys Arg Trp Ser Asp Tyr Thr Leu His Leu Pro  
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 Val Lys Ser  
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&lt;211&gt; 3007



&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

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&lt;221&gt; CDS

&lt;222&gt; (629)..(2461)

&lt;400&gt; 80

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aaaaacagca aattccttaa ttttggtaat ttttattctt ggtctttttg ttcttggaat 600
cgccagcata ctctattact atttttca atg gaa gca gca agt tta agt ctc 652
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Ser Asn Leu Trp Phe Gly Phe Leu Leu Gly Leu Leu Cys Phe Leu Asp
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aat tca tcc ttt aaa aat gat gta aaa gaa gaa tca acc aaa tat ttg 748
Asn Ser Ser Phe Lys Asn Asp Val Lys Glu Glu Ser Thr Lys Tyr Leu
      25                      30                      35                      40

ctt cta aca tcc ata gtg tta agg ata ttg tgc tct ctg gtg gag aga 796
Leu Leu Thr Ser Ile Val Leu Arg Ile Leu Cys Ser Leu Val Glu Arg
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Ile Ser Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Thr Val Glu
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Phe Leu Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu Val
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gag aag tct ctg agt gtc att ttg ctt gtt gta gct ctg gct atg ctg 940
Glu Lys Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met Leu
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gta tta gac agc gaa aat tca acc cct tgg gtg aaa gaa gtg agg aaa Val Leu Asp Ser Glu Asn Ser Thr Pro Trp Val Lys Glu Val Arg Lys 460 465 470			2044
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gta gat att gaa gaa gct gac ccg cca cag cta ggt gac ttt aca aaa Val Asp Ile Glu Glu Ala Asp Pro Pro Gln Leu Gly Asp Phe Thr Lys 490 495 500			2140
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agt gac tac act ctg cat ttg cca acg gga agc gat gtg gcc aag cac Ser Asp Tyr Thr Leu His Leu Pro Thr Gly Ser Asp Val Ala Lys His 540 545 550			2284
tgg atg tta cac ttt cct cgt att aca tat ccc cta gtg cat ttg gca Trp Met Leu His Phe Pro Arg Ile Thr Tyr Pro Leu Val His Leu Ala 555 560 565			2332



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Glu Asp Gly Glu Ser Leu Glu Phe Phe Glu Thr Gln Phe Ile Leu Ser  
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Pro Arg Ser Leu Leu Gln Glu Asn Asn Trp Pro Pro His Arg Pro Ile  
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Met Thr Ser Phe  
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Glu Asp Ala Asp Thr Glu Glu Thr Val Thr Cys Leu Gln Met Thr Val  
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Tyr His Pro Gly Gln Leu Gln Cys Gly Ile Phe Gln Ser Ile Ser Phe  
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40 45 50  
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Ser Asn Ile Cys His Tyr Thr Phe Gln Asp Lys Gln Val Ser Arg Val  
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&lt;210&gt; 83

&lt;211&gt; 392

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 83

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Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Phe Arg Arg Lys Asn  
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Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys  
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 115 120 125

Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser  
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Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg  
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Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln  
 165 170 175

Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser  
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Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser  
 195 200 205

Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met  
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Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu  
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65	70	75	80	
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Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro	85	90	95	
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Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu	100	105	110	
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Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val	115	120	125	
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Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg	145	150	155	160
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Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser	180	185	190	
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ttc aca gtg ggc tca ctg cta gaa cag ggg gcc cta ctg gag gga acc				982
Phe Thr Val Gly Ser Leu Leu Glu Gln Gly Ala Leu Leu Glu Gly Thr	275	280	285	
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Arg Phe Met Gly Arg His Ser Glu Phe Ala Ala His Ala Leu Leu Leu	290	295	300	

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cag ttt ggg gct gcc gtc ttc acc atc atc atg acc ctc cgc cag gcc 1126  
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 Val Tyr Ala Arg Gly Arg Leu Lys Gln Arg Gly Lys Lys Ala Val Pro  
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tctgccacct tccagactca ctcccctctg caaataacctg catttcttac cctggtgaga 1684

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 <213> Homo sapiens

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 Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Phe Arg Arg Lys Asn  
 50 55 60  
 Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys  
 65 70 75 80  
 Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro  
 85 90 95  
 Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu  
 100 105 110  
 Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val  
 115 120 125  
 Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser  
 130 135 140  
 Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg  
 145 150 155 160  
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 165 170 175  
 Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser  
 180 185 190  
 Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser  
 195 200 205  
 Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met  
 210 215 220  
 Leu Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr  
 225 230 235 240  
 Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser  
 245 250 255  
 Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu  
 260 265 270  
 Ile Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp  
 275 280 285  
 Gln Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe  
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 Gly Val Asn Phe Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu  
 305 310 315 320  
 Gln Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu  
 325 330 335



cga aca gag gcg gca gag acc acc ccg atg tgg cag gcc ctg aag ctg	454
Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu	
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Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val	
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ctg cag gaa aga gtg atg acc cgc agc tat ggg gcc aca gcc aca tca	550
Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser	
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ccg ggt gag cgc ttt acg gac tcg cag ttc ctg gtg cta atg aac cga	598
Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg	
145 150 155 160	
gtg ctg gca ctg att gtg gct ggc ctc tcc tgt gtt ctc tgc aag cag	646
Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln	
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ccc cgg cat ggg gca ccc atg tac cgg tac tcc ttt gcc agc ctg tcc	694
Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser	
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Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser	
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Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met	
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Leu Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr	
225 230 235 240	
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Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser	
245 250 255	
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Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu	
260 265 270	
atc tta ctg gca ggt tat att gct ttt gac agc ttc acc tca aac tgg	982
Ile Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp	
275 280 285	
cag gat gcc ctg ttt gcc tat aag atg tca tcg gtg cag atg atg ttt	1030
Gln Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe	
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ggg gtc aat ttc ttc tcc tgc ctc ttc aca gtg ggc tca ctg cta gaa	1078
Gly Val Asn Phe Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu	
305 310 315 320	





aaatgctgag aaatacataa agttttcctc ttctgccttg gatatttata atg ggt	116
Met Gly	
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Ile Gly Lys Ser Lys Ile Asn Ser Cys Pro Leu Ser Leu Ser Trp Gly	
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Lys Arg His Ser Val Asp Thr Ser Pro Gly Tyr His Glu Ser Asp Ser	
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Lys Lys Ser Glu Asp Leu Ser Leu Cys Asn Val Ala Glu His Ser Asn	
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aca aca gag ggg cca aca gga aag cag gag gga gct cag agc gtg gaa	308
Thr Thr Glu Gly Pro Thr Gly Lys Gln Glu Gly Ala Gln Ser Val Glu	
55 60 65	
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Glu Met Phe Glu Glu Glu Ala Glu Glu Glu Val Phe Leu Lys Phe Val	
70 75 80	
ata ttg cat gca gaa gat gac aca gat gaa gcc ctc aga gtc cag aat	404
Ile Leu His Ala Glu Asp Asp Thr Asp Glu Ala Leu Arg Val Gln Asn	
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Leu Leu Gln Asp Asp Phe Gly Ile Lys Pro Gly Ile Ile Phe Ala Glu	
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Met Pro Cys Gly Arg Gln His Leu Gln Asn Leu Asp Asp Ala Val Asn	
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ggg tct gca tgg aca atc tta tta ctg act gaa aac ttt tta aga gat	548
Gly Ser Ala Trp Thr Ile Leu Leu Leu Thr Glu Asn Phe Leu Arg Asp	
135 140 145	
act tgg tgt aat ttc cag ttc tat acg tcc cta atg aac tcc gtt aac	596
Thr Trp Cys Asn Phe Gln Phe Tyr Thr Ser Leu Met Asn Ser Val Asn	
150 155 160	
agg cag cat aaa tac aac tct gtt ata ccc atg cgg ccc ctg aac aat	644
Arg Gln His Lys Tyr Asn Ser Val Ile Pro Met Arg Pro Leu Asn Asn	
165 170 175	
ccc ctt ccc cga gaa agg act ccc ttt gcc ctc caa acc atc aat gcc	692
Pro Leu Pro Arg Glu Arg Thr Pro Phe Ala Leu Gln Thr Ile Asn Ala	
180 185 190	
tta gag gaa gaa agt cgt gga ttt cct aca caa gta gaa aga att ttt	740
Leu Glu Glu Glu Ser Arg Gly Phe Pro Thr Gln Val Glu Arg Ile Phe	
195 200 205 210	



[illegible]

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ttagccttaa cgttctgata gtagcttact actcacttct ctttttcagt tttcataata 2575
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<213> Homo sapiens
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Val	Ile	Leu	Leu	Ala	Val	Gly	Ile	Trp	Gly	Lys	Val	Ser	Leu	Glu	Asn	
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Tyr	Phe	Ser	Leu	Leu	Asn	Glu	Lys	Ala	Thr	Asn	Val	Pro	Phe	Val	Leu	
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Ala	Thr	Cys	Arg	Ala	Ser	Ala	Trp	Met	Leu	Lys	Leu	Tyr	Ala	Met	Phe	
				85					90					95		
Leu	Thr	Leu	Val	Phe	Leu	Val	Glu	Leu	Val	Ala	Ala	Ile	Val	Gly	Phe	
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Val	Phe	Arg	His	Glu	Ile	Lys	Asn	Ser	Phe	Lys	Asn	Asn	Tyr	Glu	Lys	
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Asp	Trp	Thr	Asp	Thr	Asn	Tyr	Tyr	Ser	Glu	Lys	Gly	Phe	Pro	Lys	Ser	
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Cys	Cys	Lys	Leu	Glu	Asp	Cys	Thr	Pro	Gln	Arg	Asp	Ala	Asp	Lys	Val	
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 130 135 140

gac aag atc caa aat acg ttg cat tgt tgt ggt gtc acc gat tat aga 539  
 Asp Lys Ile Gln Asn Thr Leu His Cys Cys Gly Val Thr Asp Tyr Arg  
 145 150 155 160

gat tgg aca gat act aat tat tac tca gaa aaa gga ttt cct aag agt 587  
 Asp Trp Thr Asp Thr Asn Tyr Tyr Ser Glu Lys Gly Phe Pro Lys Ser  
 165 170 175

tgc tgt aaa ctt gaa gat tgt act cca cag aga gat gca gac aaa gta 635  
 Cys Cys Lys Leu Glu Asp Cys Thr Pro Gln Arg Asp Ala Asp Lys Val  
 180 185 190

aac aat gaa ggt tgt ttt ata aag gtg atg acc att ata gag tca gaa 683  
 Asn Asn Glu Gly Cys Phe Ile Lys Val Met Thr Ile Ile Glu Ser Glu  
 195 200 205

atg gga gtc gtt gca gga att tcc ttt gga gtt gct tgc ttc caa ctg 731  
 Met Gly Val Val Ala Gly Ile Ser Phe Gly Val Ala Cys Phe Gln Leu  
 210 215 220

att gga atc ttt ctc gcc tac tgc ctc tct cgt gcc ata aca aat aac 779  
 Ile Gly Ile Phe Leu Ala Tyr Cys Leu Ser Arg Ala Ile Thr Asn Asn  
 225 230 235 240

cag tat gag ata gtg taacccaatg tatctgtggg cctattcctc tctaccttta 834  
 Gln Tyr Glu Ile Val  
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aggacattta ggggtcccccc tgtgaattag aaagttgctt ggctggagaa ctgacaacac 894

tacttactga tagaccaaaa aactacacca gtaggttgat tcaatcaaga tgtatgtaga 954

cctaaaacta caccaatagg ctgattcaat caagatccgt gctcgcagtg ggctgattca 1014

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tgaaaccctg tatccctctg aaacactgga agagctagta aattgtaaat gaagtaatac 1134

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gctattttga tgtagtgtta caagatggaa aattgattcc tctgactttg ctattgatgt 1254

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&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (26)..(565)

&lt;400&gt; 92

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Arg Val Pro Met Glu Asp Gly Asp Lys Arg Cys Lys Leu Leu Leu Gly
 10             15             20             25

ata gga att ctg gtg ctc ctg atc atc gtg att ctg ggg gtg ccc ttg 148
Ile Gly Ile Leu Val Leu Leu Ile Ile Val Ile Leu Gly Val Pro Leu
             30             35             40

att atc ttc acc atc aag gcc aac agc gag gcc tgc cgg gac ggc ctt 196
Ile Ile Phe Thr Ile Lys Ala Asn Ser Glu Ala Cys Arg Asp Gly Leu
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cgg gca gtg atg gag tgt cgc aat gtc acc cat ctc ctg caa caa gag 244
Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu Leu Gln Gln Glu
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ctg acc gag gcc cag aag ggc ttt cag gat gtg gag gcc cag gct gcc 292
Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu Ala Gln Ala Ala
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acc tgc aac cac act gtg atg gcc cta atg gct tcc ctg gat gca gag 340
Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser Leu Asp Ala Glu
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aag gcc caa gga caa aag aaa gtg gag gag ctt gag gga gag atc act 388
Lys Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu Gly Glu Ile Thr
             110             115             120

aca tta aac cat aag ctt cag gac gcg tct gca gag gtg gag cga ctg 436
Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu Val Glu Arg Leu
             125             130             135

aga aga gaa aac cag gtc tta agc gtg aga atc gcg gac aag aag tac 484
Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala Asp Lys Lys Tyr
             140             145             150

tac ccc agc tcc cag gac tcc agc tcc gct gcg gcg ccc cag ctg ctg 532
Tyr Pro Ser Ser Gln Asp Ser Ser Ser Ala Ala Ala Pro Gln Leu Leu
             155             160             165

att gtg ctg ctg ggc ctc agc gct ctg ctg cag tgagatccca ggaagctggc 585
Ile Val Leu Leu Gly Leu Ser Ala Leu Leu Gln
             170             175             180

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Arg 225	Ala	Ile	Arg	Gln	Ala 230	Arg	Ala	Arg	Ala	Arg 235	Leu	Pro	Val	Thr	Thr 240
Trp	Arg	Ile	Ser	Ala 245	Gly	Ser	Gly	Gly	Gln 250	Ala	Glu	Arg	Thr	Ile 255	Ala
Gly	Thr	Thr	Arg 260	Ala	Val	Ser	Arg	Gly 265	Ala	Arg	Ile	Leu	Ser 270	Ala	Thr
Thr	Ser	Gly 275	Ile	Phe	Leu	Ala	Leu 280	Asp	Val	Val	Asn	Leu 285	Val	Tyr	Glu
Ser	Lys 290	His	Leu	His	Glu	Gly 295	Ala	Lys	Ser	Ala	Ser 300	Ala	Glu	Glu	Leu
Arg 305	Arg	Gln	Ala	Gln	Glu 310	Leu	Glu	Glu	Asn	Leu 315	Met	Glu	Leu	Thr	Gln 320
Ile	Tyr	Gln	Arg	Leu 325	Asn	Pro	Cys	His	Thr	His 330					

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<212> DNA
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<221> CDS
<222> (175)..(1167)
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							Met									
							1									
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Asp	Ser	Glu	Lys	Lys	Arg	Phe	Thr	Glu	Glu	Ala	Thr	Lys	Tyr	Phe	Arg	
			5						10				15			
gag	aga	gtc	agc	cca	gtg	cat	ctg	caa	atc	ctg	ctg	act	aac	aat	gaa	273
Glu	Arg	Val	Ser	Pro	Val	His	Leu	Gln	Ile	Leu	Leu	Thr	Asn	Asn	Glu	
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gcc	tgg	aag	aga	ttc	gtg	act	gcg	gct	gaa	ttg	ccc	agg	gat	gag	gca	321
Ala	Trp	Lys	Arg	Phe	Val	Thr	Ala	Ala	Glu	Leu	Pro	Arg	Asp	Glu	Ala	
		35				40					45					
gat	gct	ctc	tac	gaa	gct	ctg	aag	aag	ctt	aga	aca	tat	gca	gct	att	369
Asp	Ala	Leu	Tyr	Glu	Ala	Leu	Lys	Lys	Leu	Arg	Thr	Tyr	Ala	Ala	Ile	
	50				55					60					65	



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Glu	Asp	Glu	Tyr	Val	Gln	Gln	Lys	Asp	Glu	Gln	Phe	Arg	Glu	Trp	Phe	
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Leu	Lys	Glu	Phe	Pro	Gln	Val	Lys	Arg	Lys	Ile	Gln	Glu	Ser	Ile	Glu	
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Lys	Leu	Arg	Ala	Leu	Ala	Asn	Gly	Ile	Glu	Glu	Val	His	Arg	Gly	Cys	
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acc	atc	tcc	aac	gtg	gtg	tcc	agc	tcc	act	ggc	gct	gcc	tct	ggc	atc	561
Thr	Ile	Ser	Asn	Val	Val	Ser	Ser	Ser	Thr	Gly	Ala	Ala	Ser	Gly	Ile	
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atg	tcc	ctt	gct	ggc	ctt	gtt	ttg	gca	cca	ttt	aca	gca	ggg	acg	agt	609
Met	Ser	Leu	Ala	Gly	Leu	Val	Leu	Ala	Pro	Phe	Thr	Ala	Gly	Thr	Ser	
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ctg	gcc	ctt	act	gca	gct	ggg	gta	ggg	ctg	gga	gca	gcg	tct	gct	gtg	657
Leu	Ala	Leu	Thr	Ala	Ala	Gly	Val	Gly	Leu	Gly	Ala	Ala	Ser	Ala	Val	
				150				155						160		
act	ggg	atc	acc	acc	agc	atc	gtg	gag	cac	tca	tac	aca	tca	tca	gca	705
Thr	Gly	Ile	Thr	Thr	Ser	Ile	Val	Glu	His	Ser	Tyr	Thr	Ser	Ser	Ala	
			165				170						175			
gaa	gct	gaa	gcc	agc	agg	ctg	act	gca	acc	agc	att	gac	cga	ttg	aag	753
Glu	Ala	Glu	Ala	Ser	Arg	Leu	Thr	Ala	Thr	Ser	Ile	Asp	Arg	Leu	Lys	
		180				185						190				
gta	ttt	aag	gaa	gtt	atg	cgt	gac	atc	aca	ccc	aac	tta	ctt	tcc	ctt	801
Val	Phe	Lys	Glu	Val	Met	Arg	Asp	Ile	Thr	Pro	Asn	Leu	Leu	Ser	Leu	
	195					200					205					
ctt	aat	aat	tat	tac	gaa	gcc	aca	caa	acc	att	ggg	agt	gaa	atc	cgt	849
Leu	Asn	Asn	Tyr	Tyr	Glu	Ala	Thr	Gln	Thr	Ile	Gly	Ser	Glu	Ile	Arg	
210					215					220					225	
gcc	atc	agg	caa	gcc	aga	gcc	agg	gcc	cga	ctc	cct	gtg	acc	acc	tgg	897
Ala	Ile	Arg	Gln	Ala	Arg	Ala	Arg	Ala	Arg	Leu	Pro	Val	Thr	Thr	Trp	
				230					235					240		
cga	atc	tca	gct	gga	agt	ggc	ggc	caa	gca	gag	aga	acg	att	gca	ggc	945
Arg	Ile	Ser	Ala	Gly	Ser	Gly	Gly	Gln	Ala	Glu	Arg	Thr	Ile	Ala	Gly	
			245				250						255			
acc	acc	cgg	gca	gtg	agc	aga	gga	gcc	cgg	atc	ctg	agt	gcg	acc	act	993
Thr	Thr	Arg	Ala	Val	Ser	Arg	Gly	Ala	Arg	Ile	Leu	Ser	Ala	Thr	Thr	
		260					265					270				

aag cac ttg cat gag ggg gca aag tct gca tct gct gag gag ctg agg	1089
Lys His Leu His Glu Gly Ala Lys Ser Ala Ser Ala Glu Glu Leu Arg	
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cgg cag gct cag gag ctg gag gag aat cta atg gag ctg act cag atc	1137
Arg Gln Ala Gln Glu Leu Glu Glu Asn Leu Met Glu Leu Thr Gln Ile	
310 315 320	
tat cag cgt ctg aat cca tgc cat acc cac tgaccccgaga ccagtgcagc	1187
Tyr Gln Arg Leu Asn Pro Cys His Thr His	
325 330	
cagcagggga ggtgagccat acacaggcca cgacaaaatg caggcatttt attaggggga	1247
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Cys Leu Glu Gly Ile Leu Glu Gly Ser Val Arg Asn Ser Leu Trp Arg  
35 40 45

Pro	Ala	Pro	Phe	Lys	Cys	Pro	Thr	Cys	Arg	Lys	Glu	Thr	Ser	Ala	Thr	50	55	60
Gly	Ile	Asn	Ser	Leu	Gln	Val	Asn	Tyr	Ser	Leu	Lys	Gly	Ile	Val	Glu	65	70	75
Lys	Tyr	Asn	Lys	Ile	Lys	Ile	Ser	Pro	Lys	Met	Pro	Val	Cys	Lys	Gly	85	90	95
His	Leu	Gly	Gln	Pro	Leu	Asn	Ile	Phe	Cys	Leu	Thr	Asp	Met	Gln	Leu	100	105	110
Ile	Cys	Gly	Ile	Cys	Ala	Thr	Arg	Gly	Glu	His	Thr	Lys	His	Val	Phe	115	120	125
Cys	Ser	Ile	Glu	Asp	Ala	Tyr	Ala	Gln	Glu	Arg	Asp	Ala	Phe	Glu	Ser	130	135	140
Leu	Phe	Gln	Ser	Phe	Glu	Thr	Trp	Arg	Arg	Gly	Asp	Ala	Leu	Ser	Arg	145	150	155
Leu	Asp	Thr	Leu	Glu	Thr	Ser	Lys	Arg	Lys	Ser	Leu	Gln	Leu	Leu	Thr	165	170	175
Lys	Asp	Ser	Asp	Lys	Val	Lys	Glu	Phe	Phe	Glu	Lys	Leu	Gln	His	Thr	180	185	190
Leu	Asp	Gln	Lys	Lys	Asn	Glu	Ile	Leu	Ser	Asp	Phe	Glu	Thr	Met	Lys	195	200	205
Leu	Ala	Val	Met	Gln	Ala	Tyr	Asp	Pro	Glu	Ile	Asn	Lys	Leu	Asn	Thr	210	215	220
Ile	Leu	Gln	Glu	Gln	Arg	Met	Ala	Phe	Asn	Ile	Ala	Glu	Ala	Phe	Lys	225	230	235
Asp	Val	Ser	Glu	Pro	Ile	Val	Phe	Leu	Gln	Gln	Met	Gln	Glu	Phe	Arg	245	250	255
Glu	Lys	Ile	Lys	Val	Ile	Lys	Glu	Thr	Pro	Leu	Pro	Pro	Ser	Asn	Leu	260	265	270
Pro	Ala	Ser	Pro	Leu	Met	Lys	Asn	Phe	Asp	Thr	Ser	Gln	Trp	Glu	Asp	275	280	285
Ile	Lys	Leu	Val	Asp	Val	Asp	Lys	Leu	Ser	Leu	Pro	Gln	Asp	Thr	Gly	290	295	300
Thr	Phe	Ile	Ser	Lys	Ile	Pro	Trp	Ser	Phe	Tyr	Lys	Leu	Phe	Leu	Leu	305	310	315
Ile	Leu	Leu	Leu	Gly	Leu	Val	Ile	Val	Phe	Gly	Pro	Thr	Met	Phe	Leu	325	330	335
Glu	Trp	Ser	Leu	Phe	Asp	Asp	Leu	Ala	Thr	Trp	Lys	Gly	Cys	Leu	Ser	340	345	350

Asn Phe Ser Ser Tyr Leu Thr Lys Thr Ala Asp Phe Ile Glu Gln Ser  
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Val Phe Tyr Trp Glu Gln Val Thr Asp Gly Phe Phe Ile Phe Asn Glu  
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Met Glu Leu Leu Glu Glu Asp Leu Thr Cys Pro Ile Cys Cys Ser Leu  
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Phe Asp Asp Pro Arg Val Leu Pro Cys Ser His Asn Phe Cys Lys Lys  
20 25 30

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Cys Leu Glu Gly Ile Leu Glu Gly Ser Val Arg Asn Ser Leu Trp Arg  
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Pro Ala Pro Phe Lys Cys Pro Thr Cys Arg Lys Glu Thr Ser Ala Thr  
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Gly Ile Asn Ser Leu Gln Val Asn Tyr Ser Leu Lys Gly Ile Val Glu  
65 70 75 80

aag tat aac aag atc aag atc tct ccc aaa atg cca gta tgc aaa gga 468  
Lys Tyr Asn Lys Ile Lys Ile Ser Pro Lys Met Pro Val Cys Lys Gly  
85 90 95

cac ttg ggg cag cct ctc aac att ttc tgc ctg act gat atg cag ctg 516  
His Leu Gly Gln Pro Leu Asn Ile Phe Cys Leu Thr Asp Met Gln Leu  
100 105 110

att tgt ggg atc tgt gct act cgt ggg gag cac acc aaa cat gtc ttc	564
Ile Cys Gly Ile Cys Ala Thr Arg Gly Glu His Thr Lys His Val Phe	
115 120 125	
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Cys Ser Ile Glu Asp Ala Tyr Ala Gln Glu Arg Asp Ala Phe Glu Ser	
130 135 140	
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Leu Phe Gln Ser Phe Glu Thr Trp Arg Arg Gly Asp Ala Leu Ser Arg	
145 150 155 160	
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Leu Asp Thr Leu Glu Thr Ser Lys Arg Lys Ser Leu Gln Leu Leu Thr	
165 170 175	
aaa gat tca gat aaa gtg aag gaa ttt ttt gag aag tta caa cac aca	756
Lys Asp Ser Asp Lys Val Lys Glu Phe Phe Glu Lys Leu Gln His Thr	
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Leu Asp Gln Lys Lys Asn Glu Ile Leu Ser Asp Phe Glu Thr Met Lys	
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Ile Leu Gln Glu Gln Arg Met Ala Phe Asn Ile Ala Glu Ala Phe Lys	
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Asp Val Ser Glu Pro Ile Val Phe Leu Gln Gln Met Gln Glu Phe Arg	
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Glu Lys Ile Lys Val Ile Lys Glu Thr Pro Leu Pro Pro Ser Asn Leu	
260 265 270	
cct gca agc cct tta atg aag aac ttt gat acc agt cag tgg gaa gac	1044
Pro Ala Ser Pro Leu Met Lys Asn Phe Asp Thr Ser Gln Trp Glu Asp	
275 280 285	
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Ile Lys Leu Val Asp Val Asp Lys Leu Ser Leu Pro Gln Asp Thr Gly	
290 295 300	
aca ttc att agc aag att ccc tgg agc ttt tat aag tta ttt ttg cta	1140
Thr Phe Ile Ser Lys Ile Pro Trp Ser Phe Tyr Lys Leu Phe Leu Leu	
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Ile Leu Leu Leu Gly Leu Val Ile Val Phe Gly Pro Thr Met Phe Leu	
325 330 335	



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Gln	Lys	Ile	Arg	Ser	Asp	Phe	Lys	Asn	Leu	Gln	Cys	Phe	Leu	His	Glu		
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Glu	Glu	Lys	Ser	Tyr	Leu	Trp	Arg	Leu	Glu	Lys	Glu	Glu	Gln	Gln	Thr		
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Leu	Ser	Arg	Leu	Arg	Asp	Tyr	Glu	Ala	Gly	Leu	Gly	Leu	Lys	Ser	Asn		
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Ser	His	Gln	Val	Ser	Val	Thr	Leu	Asp	Pro	Asp	Thr	Ala	His	His	Glu		
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Val	Gly	Glu	Gly	Thr	Gly	Trp	Asp	Leu	Gly	Val	Cys	Met	Glu	Asn	Val		
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Gln	Arg	Gly	Thr	Gly	Met	Lys	Gln	Glu	Pro	Gln	Ser	Gly	Phe	Trp	Thr		
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Leu	Arg	Leu	Cys	Lys	Lys	Lys	Gly	Tyr	Val	Ala	Leu	Thr	Ser	Pro	Pro		
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Thr	Ser	Leu	His	Leu	His	Glu	Gln	Pro	Leu	Leu	Val	Gly	Ile	Phe	Leu		
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Asp	Tyr	Glu	Ala	Gly	Val	Val	Ser	Phe	Tyr	Asn	Gly	Asn	Thr	Gly	Cys		
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His	Ile	Phe	Thr	Phe	Pro	Lys	Ala	Ser	Phe	Ser	Asp	Thr	Leu	Arg	Pro		
		435					440					445					
Tyr	Phe	Gln	Val	Tyr	Gln	Tyr	Ser	Pro	Leu	Phe	Leu	Pro	Pro	Pro	Gly		
	450					455					460						





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Lys	Leu	Lys	Gln	Leu	Glu	Asp	Arg	Cys	Thr	Glu	Gln	Lys	Leu	Ser	Thr	
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Ala	Met	Arg	Ile	Thr	Lys	Trp	Lys	Glu	Lys	Val	Gln	Ile	Gln	Arg	Gln	
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Lys	Ile	Arg	Ser	Asp	Phe	Lys	Asn	Leu	Gln	Cys	Phe	Leu	His	Glu	Glu	
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Glu	Lys	Ser	Tyr	Leu	Trp	Arg	Leu	Glu	Lys	Glu	Glu	Gln	Gln	Thr	Leu	
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agt	aga	ctg	agg	gac	tat	gag	gct	ggg	ctg	ggg	ctg	aag	agc	aat	gaa	1151
Ser	Arg	Leu	Arg	Asp	Tyr	Glu	Ala	Gly	Leu	Gly	Leu	Lys	Ser	Asn	Glu	
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ctc	aag	agc	cac	atc	ctg	gaa	ctg	gag	gaa	aaa	tgt	cag	ggc	tca	gcc	1199
Leu	Lys	Ser	His	Ile	Leu	Glu	Leu	Glu	Glu	Lys	Cys	Gln	Gly	Ser	Ala	
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Gln	Lys	Leu	Leu	Gln	Asn	Val	Asn	Asp	Thr	Leu	Ser	Arg	Ser	Trp	Ala	
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Val	Lys	Leu	Glu	Thr	Ser	Glu	Ala	Val	Ser	Leu	Glu	Leu	His	Thr	Met	
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Cys	Asn	Val	Ser	Lys	Leu	Tyr	Phe	Asp	Val	Lys	Lys	Met	Leu	Arg	Ser	
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cat	caa	gtt	agt	gtg	act	ctg	gat	cca	gat	aca	gct	cat	cac	gaa	cta	1391
His	Gln	Val	Ser	Val	Thr	Leu	Asp	Pro	Asp	Thr	Ala	His	His	Glu	Leu	
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Ile	Leu	Ser	Glu	Asp	Arg	Arg	Gln	Val	Thr	Arg	Gly	T				

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agg ggc act ggc atg aag caa gag cct cag tct gga ttc tgg acc ctc Arg Gly Thr Gly Met Lys Gln Glu Pro Gln Ser Gly Phe Trp Thr Leu 370 375 380 385			1631
agg ctg tgc aaa aag aaa ggc tat gta gca ctt act tct ccc cca act Arg Leu Cys Lys Lys Lys Gly Tyr Val Ala Leu Thr Ser Pro Pro Thr 390 395 400			1679
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<211> 465

<212> PRT

<213> Homo sapiens

<400> 99

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His	Ser	Tyr	Cys	His	Leu	Cys	Ile	Thr	Asp	Phe	Phe	Lys	Asn	Pro	Ser
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Gln	Lys	Gln	Leu	Arg	Gln	Glu	Thr	Phe	Cys	Cys	Pro	Gln	Cys	Arg	Ala
	50					55					60				

Pro	Phe	His	Met	Asp	Ser	Leu	Arg	Pro	Asn	Lys	Gln	Leu	Gly	Ser	Leu	65	70	75	80
Ile	Glu	Ala	Leu	Lys	Glu	Thr	Asp	Gln	Glu	Met	Ser	Cys	Glu	Glu	His	85	90	95	
Gly	Glu	Gln	Phe	His	Leu	Phe	Cys	Glu	Asp	Glu	Gly	Gln	Leu	Ile	Cys	100	105	110	
Trp	Arg	Cys	Glu	Arg	Ala	Pro	Gln	His	Lys	Gly	His	Thr	Thr	Ala	Leu	115	120	125	
Val	Glu	Asp	Val	Cys	Gln	Gly	Tyr	Lys	Glu	Lys	Leu	Gln	Lys	Ala	Val	130	135	140	
Thr	Lys	Leu	Lys	Gln	Leu	Glu	Asp	Arg	Cys	Thr	Glu	Gln	Lys	Leu	Ser	145	150	155	160
Thr	Ala	Met	Arg	Ile	Thr	Lys	Trp	Lys	Glu	Lys	Val	Gln	Ile	Gln	Arg	165	170	175	
Gln	Lys	Ile	Arg	Ser	Asp	Phe	Lys	Asn	Leu	Gln	Cys	Phe	Leu	His	Glu	180	185	190	
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Leu	Ser	Arg	Leu	Arg	Asp	Tyr	Glu	Ala	Gly	Leu	Gly	Leu	Lys	Ser	Asn	210	215	220	
Glu	Leu	Lys	Ser	His	Ile	Leu	Glu	Leu	Glu	Glu	Lys	Cys	Gln	Gly	Ser	225	230	235	240
Ala	Gln	Lys	Leu	Leu	Gln	Asn	Val	Asn	Asp	Thr	Leu	Ser	Arg	Ser	Trp	245	250	255	
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Ser	His	Gln	Val	Ser	Val	Thr	Leu	Asp	Pro	Asp	Thr	Ala	His	His	Glu	290	295	300	
Leu	Ile	Leu	Ser	Glu	Asp	Arg	Arg	Gln	Val	Thr	Arg	Gly	Tyr	Thr	Gln	305	310	315	320
Glu	Asn	Gln	Asp	Thr	Ser	Ser	Arg	Arg	Phe	Thr	Ala	Phe	Pro	Cys	Val	325	330	335	
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Val	Gly	Glu	Gly	Thr	Gly	Trp	Asp	Leu	Gly	Val	Cys	Met	Glu	Asn	Val	355	360	365	



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Ser	Tyr	Cys	His	Leu	Cys	Ile	Thr	Asp	Phe	Phe	Lys	Asn	Pro	Ser	Gln	
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Lys	Gln	Leu	Arg	Gln	Glu	Thr	Phe	Cys	Cys	Pro	Gln	Cys	Arg	Ala	Pro	
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Phe	His	Met	Asp	Ser	Leu	Arg	Pro	Asn	Lys	Gln	Leu	Gly	Ser	Leu	Ile	
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gaa	gcc	ctc	aaa	gag	acg	gat	caa	gaa	atg	tca	tgt	gag	gaa	cac	gga	767
Glu	Ala	Leu	Lys	Glu	Thr	Asp	Gln	Glu	Met	Ser	Cys	Glu	Glu	His	Gly	
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Arg	Cys	Glu	Arg	Ala	Pro	Gln	His	Lys	Gly	His	Thr	Thr	Ala	Leu	Val	
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gaa	gac	gta	tgc	cag	ggc	tac	aag	gaa	aag	ctc	cag	aaa	gct	gtg	aca	911
Glu	Asp	Val	Cys	Gln	Gly	Tyr	Lys	Glu	Lys	Leu	Gln	Lys	Ala	Val	Thr	
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Lys	Leu	Lys	Gln	Leu	Glu	Asp	Arg	Cys	Thr	Glu	Gln	Lys	Leu	Ser	Thr	
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Ala	Met	Arg	Ile	Thr	Lys	Trp	Lys	Glu	Lys	Val	Gln	Ile	Gln	Arg	Gln	
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Lys	Ile	Arg	Ser	Asp	Phe	Lys	Asn	Leu	Gln	Cys	Phe	Leu	His	Glu	Glu	
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Glu	Lys	Ser	Tyr	Leu	Trp	Arg	Leu	Glu	Lys	Glu	Glu	Gln	Gln	Thr	Leu	
	195					200					205					
agt	aga	ctg	agg	gac	tat	gag	gct	ggt	ctg	ggg	ctg	aag	agc	aat	gaa	1151
Ser	Arg	Leu	Arg	Asp	Tyr	Glu	Ala	Gly	Leu	Gly	Leu	Lys	Ser	Asn	Glu	
210					215					220					225	
ctc	aag	agc	cac	atc	ctg	gaa	ctg	gag	gaa	aaa	tgt	cag	ggc	tca	gcc	1199
Leu	Lys	Ser	His	Ile	Leu	Glu	Leu	Glu	Glu	Lys	Cys	Gln	Gly	Ser	Ala	
				230												

gtg aag ctg gaa aca tca gag gct gtc tcc ttg gaa ctt cat act atg 1295  
 Val Lys Leu Glu Thr Ser Glu Ala Val Ser Leu Glu Leu His Thr Met  
 260 265 270

tgc aat gtt tcc aag ctt tac ttc gat gtg aag aaa atg tta agg agt 1343  
 Cys Asn Val Ser Lys Leu Tyr Phe Asp Val Lys Lys Met Leu Arg Ser  
 275 280 285

cat caa gtt agt gtg act ctg gat cca gat aca gct cat cac gaa cta 1391  
 His Gln Val Ser Val Thr Leu Asp Pro Asp Thr Ala His His Glu Leu  
 290 295 300 305

att ctc tct gag gat cgg aga caa gtg act cgt gga tac acc cag gag 1439  
 Ile Leu Ser Glu Asp Arg Arg Gln Val Thr Arg Gly Tyr Thr Gln Glu  
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aat cag gac aca tct tcc agg aga ttt act gcc ttc ccc tgt gtc ttg 1487  
 Asn Gln Asp Thr Ser Ser Arg Arg Phe Thr Ala Phe Pro Cys Val Leu  
 325 330 335

ggt tgt gaa ggc ttc acc tca gga aga cgt tac ttt gaa gtg gat gtt 1535  
 Gly Cys Glu Gly Phe Thr Ser Gly Arg Arg Tyr Phe Glu Val Asp Val  
 340 345 350

ggc gaa gga acc gga tgg gat tta gga gtt tgt atg gaa aat gtg cag 1583  
 Gly Glu Gly Thr Gly Trp Asp Leu Gly Val Cys Met Glu Asn Val Gln  
 355 360 365

agg ggc act ggc atg aag caa gag cct cag tct gga ttc tgg acc ctc 1631  
 Arg Gly Thr Gly Met Lys Gln Glu Pro Gln Ser Gly Phe Trp Thr Leu  
 370 375 380 385

agg ctg tgc aaa aag aaa ggc tat gta gca ctt act tct ccc cca act 1679  
 Arg Leu Cys Lys Lys Lys Gly Tyr Val Ala Leu Thr Ser Pro Pro Thr  
 390 395 400

tcc ctt cat ctg cat gag cag ccc ctg ctt gtg gga att ttt ctg gac 1727  
 Ser Leu His Leu His Glu Gln Pro Leu Leu Val Gly Ile Phe Leu Asp  
 405 410 415

tat gag gcc gga gtt gta tcc ttt tat aac ggg aat act ggc tgc cac 1775  
 Tyr Glu Ala Gly Val Val Ser Phe Tyr Asn Gly Asn Thr Gly Cys His  
 420 425 430

atc ttt act ttc ccg aag gct tcc ttc tct gat act ctc cgg ccc tat 1823  
 Ile Phe Thr Phe Pro Lys Ala Ser Phe Ser Asp Thr Leu Arg Pro Tyr  
 435 440 445

ttc cag gtt tat caa tat tct cct ttg ttt ctg cct ccc cca ggt gac 1871  
 Phe Gln Val Tyr Gln Tyr Ser Pro Leu Phe Leu Pro Pro Pro Gly Asp  
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 <212> PRT  
 <213> Homo sapiens

<400> 101

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		20						25					30		
Lys	Arg	Pro	Pro	Gln	Pro	Pro	Glu	Glu	Ser	Gln	Pro	Pro	Gln	Ser	Gln
		35					40						45		
Ala	Gln	Val	Pro	Pro	Ala	Ala	Pro	His	His	His	His	His	His	Ser	His
	50					55					60				
Ser	Gly	Pro	Glu	Ile	Ser	Arg	Ile	Ile	Val	Asp	Pro	Thr	Thr	Gly	Lys
65					70					75					80
Arg	Tyr	Cys	Arg	Gly	Lys	Val	Leu	Gly	Lys	Gly	Gly	Phe	Ala	Lys	Cys
				85					90					95	
Tyr	Glu	Met	Thr	Asp	Leu	Thr	Asn	Asn	Lys	Val	Tyr	Ala	Ala	Lys	Ile
			100					105						110	
Ile	Pro	His	Ser	Arg	Val	Ala	Lys	Pro	His	Gln	Arg	Glu	Lys	Ile	Asp
		115					120					125			
Lys	Glu	Ile	Glu	Leu	His	Arg	Ile	Leu	His	His	Lys	His	Val	Val	Gln
	130					135					140				
Phe	Tyr	His	Tyr	Phe	Glu	Asp	Lys	Glu	Asn	Ile	Tyr	Ile	Leu	Leu	Glu
145					150				155						160
Tyr	Cys	Ser	Arg	Arg	Ser	Met	Ala	His	Ile	Leu	Lys	Ala	Arg	Lys	Val
				165					170					175	
Leu	Thr	Glu	Pro	Glu	Val	Arg	Tyr	Tyr	Leu	Arg	Gln	Ile	Val	Ser	Gly
			180					185					190		
Leu	Lys	Tyr	Leu	His	Glu	Gln	Glu	Ile	Leu	His	Arg	Asp	Leu	Lys	Leu
		195					200					205			
Gly	Asn	Phe	Phe	Ile	Asn	Glu	Ala	Met	Glu	Leu	Lys	Val	Gly	Asp	Phe
	210					215					220				
Gly	Leu	Ala	Ala	Arg	Leu	Glu	Pro	Leu	Glu	His	Arg	Arg	Arg	Thr	Ile
225					230					235					240
Cys	Gly	Thr	Pro	Asn	Tyr	Leu	Ser	Pro	Glu	Val	Leu	Asn	Lys	Gln	Gly
				245					250					255	
His	Gly	Cys	Glu	Ser	Asp	Ile	Trp	Ala	Leu	Gly	Cys	Val	Met	Tyr	Thr
			260					265					270		

Met Leu Leu Gly Arg Pro Pro Phe Glu Thr Thr Asn Leu Lys Glu Thr  
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Tyr Arg Cys Ile Arg Glu Ala Arg Tyr Thr Met Pro Ser Ser Leu Leu  
290 295 300

Ala Pro Ala Lys His Leu Ile Ala Ser Met Leu Ser Lys Asn Pro Glu  
305 310 315 320

Asp Arg Pro Ser Leu Asp Asp Ile Ile Arg His Asp Phe Phe Leu Gln  
325 330 335

Gly Phe Thr Pro Asp Arg Leu Ser Ser Ser Cys Cys His Thr Val Pro  
340 345 350

Asp Phe His Leu Ser Ser Pro Ala Lys Asn Phe Phe Lys Lys Ala Ala  
355 360 365

Ala Ala Leu Phe Gly Gly Lys Lys Asp Lys Ala Arg Tyr Ile Asp Thr  
370 375 380

His Asn Arg Val Ser Lys Glu Asp Glu Asp Ile Tyr Lys Leu Arg His  
385 390 395 400

Asp Leu Lys Lys Thr Ser Ile Thr Gln Gln Pro Ser Lys His Arg Thr  
405 410 415

Asp Glu Glu Leu Gln Pro Pro Thr Thr Thr Val Ala Arg Ser Gly Thr  
420 425 430

Pro Ala Val Glu Asn Lys Gln Gln Ile Gly Asp Ala Ile Arg Met Ile  
435 440 445

Val Arg Gly Thr Leu Gly Ser Cys Ser Ser Ser Ser Glu Cys Leu Glu  
450 455 460

Asp Ser Thr Met Gly Ser Val Ala Asp Thr Val Ala Arg Val Leu Arg  
465 470 475 480

Gly Cys Leu Glu Asn Met Pro Glu Ala Asp Cys Ile Pro Lys Glu Gln  
485 490 495

Leu Ser Thr Ser Phe Gln Trp Val Thr Lys Trp Val Asp Tyr Ser Asn  
500 505 510

Lys Tyr Gly Phe Gly Tyr Gln Leu Ser Asp His Thr Val Gly Val Leu  
515 520 525

Phe Asn Asn Gly Ala His Met Ser Leu Leu Pro Asp Lys Lys Thr Val  
530 535 540

His Tyr Tyr Ala Glu Leu Gly Gln Cys Ser Val Phe Pro Ala Thr Asp  
545 550 555 560

Ala Pro Glu Gln Phe Ile Ser Gln Val Thr Val Leu Lys Tyr Phe Ser  
565 570 575



His	Tyr	Met	Glu	Glu	Asn	Leu	Met	Asp	Gly	Gly	Asp	Leu	Pro	Ser	Val
			580					585					590		
Thr	Asp	Ile	Arg	Arg	Pro	Arg	Leu	Tyr	Leu	Leu	Gln	Trp	Leu	Lys	Ser
		595					600					605			
Asp	Lys	Ala	Leu	Met	Met	Leu	Phe	Asn	Asp	Gly	Thr	Phe	Gln	Val	Asn
	610					615					620				
Phe	Tyr	His	Asp	His	Thr	Lys	Ile	Ile	Ile	Cys	Ser	Gln	Asn	Glu	Glu
625					630					635					640
Tyr	Leu	Leu	Thr	Tyr	Ile	Asn	Glu	Asp	Arg	Ile	Ser	Thr	Thr	Phe	Arg
				645					650					655	
Leu	Thr	Thr	Leu	Leu	Met	Ser	Gly	Cys	Ser	Ser	Glu	Leu	Lys	Asn	Arg
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Met	Glu	Tyr	Ala	Leu	Asn	Met	Leu	Leu	Gln	Arg	Cys	Asn			
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<212> DNA
<213> Homo sapiens
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<222> (128)..(2182)
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ggcgacc atg gag ctt ttg cgg act atc acc tac cag cca gcc gcc agc 169
      Met Glu Leu Leu Arg Thr Ile Thr Tyr Gln Pro Ala Ala Ser
        1              5              10
acc aaa atg tgc gag cag gcg ctg ggc aag ggt tgc gga gca gac tcg 217
Thr Lys Met Cys Glu Gln Ala Leu Gly Lys Gly Cys Gly Ala Asp Ser
  15              20              25              30
aag aag aag cgg ccg ccg cag ccc ccc gag gaa tcg cag cca cct cag 265
Lys Lys Lys Arg Pro Pro Gln Pro Pro Glu Glu Ser Gln Pro Pro Gln
          35              40              45
tcc cag gcg caa gtg ccc ccg gcg gcc cct cac cac cat cac cac cat 313
Ser Gln Ala Gln Val Pro Pro Ala Ala Pro His His His His His His
          50              55              60
tcg cac tcg ggg ccg gag atc tcg cgg att atc gtc gac ccc acg act 361
Ser His Ser Gly Pro Glu Ile Ser Arg Ile Ile Val Asp Pro Thr Thr
      65              70              75
ggg aag cgc tac tgc ccg gcc aaa gtg ctg gga aag qgt gcc ttt gca 409

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Gly	Lys	Arg	Tyr	Cys	Arg	Gly	Lys	Val	Leu	Gly	Lys	Gly	Gly	Phe	Ala		
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Lys	Cys	Tyr	Glu	Met	Thr	Asp	Leu	Thr	Asn	Asn	Lys	Val	Tyr	Ala	Ala		
	95					100				105					110		
aaa	att	att	cct	cac	agc	aga	gta	gct	aaa	cct	cat	caa	agg	gaa	aag	505	
Lys	Ile	Ile	Pro	His	Ser	Arg	Val	Ala	Lys	Pro	His	Gln	Arg	Glu	Lys		
				115					120					125			
att	gac	aaa	gaa	ata	gag	ctt	cac	aga	att	ctt	cat	cat	aag	cat	gta	553	
Ile	Asp	Lys	Glu	Ile	Glu	Leu	His	Arg	Ile	Leu	His	His	Lys	His	Val		
			130					135					140				
gtg	cag	ttt	tac	cac	tac	ttc	gag	gac	aaa	gaa	aac	att	tac	att	ctc	601	
Val	Gln	Phe	Tyr	His	Tyr	Phe	Glu	Asp	Lys	Glu	Asn	Ile	Tyr	Ile	Leu		
		145					150					155					
ttg	gaa	tac	tgc	agt	aga	agg	tca	atg	gct	cat	att	ttg	aaa	gca	aga	649	
Leu	Glu	Tyr	Cys	Ser	Arg	Arg	Ser	Met	Ala	His	Ile	Leu	Lys	Ala	Arg		
	160					165					170						
aag	gtg	ttg	aca	gag	cca	gaa	gtt	cga	tac	tac	ctc	agg	cag	att	gtg	697	
Lys	Val	Leu	Thr	Glu	Pro	Glu	Val	Arg	Tyr	Tyr	Leu	Arg	Gln	Ile	Val		
	175				180					185					190		
tct	gga	ctg	aaa	tac	ctt	cat	gaa	caa	gaa	atc	ttg	cac	aga	gat	ctc	745	
Ser	Gly	Leu	Lys	Tyr	Leu	His	Glu	Gln	Glu	Ile	Leu	His	Arg	Asp	Leu		
				195					200					205			
aaa	cta	ggg	aac	ttt	ttt	att	aat	gaa	gcc	atg	gaa	cta	aaa	gtt	ggg	793	
Lys	Leu	Gly	Asn	Phe	Phe	Ile	Asn	Glu	Ala	Met	Glu	Leu	Lys	Val	Gly		
			210					215					220				
gac	ttc	ggt	ctg	gca	gcc	agg	cta	gaa	ccc	ttg	gaa	cac	aga	agg	aga	841	
Asp	Phe	Gly	Leu	Ala	Ala	Arg	Leu	Glu	Pro	Leu	Glu	His	Arg	Arg	Arg		
		225					230					235					
acg	ata	tgt	ggt	acc	cca	aat	tat	ctc	tct	cct	gaa	gtc	ctc	aac	aaa	889	
Thr	Ile	Cys	Gly	Thr	Pro	Asn	Tyr	Leu	Ser	Pro	Glu	Val	Leu	Asn	Lys		
	240					245					250						
caa	gga	cat	ggc	tgt	gaa	tca	gac	att	tgg	gcc	ctg	ggc	tgt	gta	atg	937	
Gln	Gly	His	Gly	Cys	Glu	Ser	Asp	Ile	Trp	Ala	Leu	Gly	Cys	Val	Met		
	255				260				265					270			
tat	aca	atg	tta	cta	ggg	agg	ccc	cca	ttt	gaa	act	aca	aat	ctc	aaa	985	
Tyr	Thr	Met	Leu	Leu	Gly	Arg	Pro	Pro	Phe	Glu	Thr	Thr	Asn	Leu	Lys		
				275					280					285			
gaa	act	tat	agg	tgc	ata	agg	gaa	gca	agg	tat	aca	atg	ccg	tcc	tca	1033	
Glu	Thr	Tyr	Arg	Cys	Ile	Arg	Glu	Ala	Arg	Tyr	Thr	Met	Pro	Ser	Ser		
			290					295					300				
ttg	ctg	gct	cct	gcc	aag	cac	tta	att	gct	agt	atg	ttg	tcc	aaa	aac	1081	
Leu	Leu	Ala	Pro	Ala	Lys	His	Leu	Ile	Ala	Ser	Met	Leu	Ser	Lys	Asn		

305					310					315							
cca	gag	gat	cgt	ccc	agt	ttg	gat	gac	atc	att	cga	cat	gac	ttt	ttt	1129	
Pro	Glu	Asp	Arg	Pro	Ser	Leu	Asp	Asp	Ile	Ile	Arg	His	Asp	Phe	Phe		
	320					325					330						
ttg	cag	ggc	ttc	act	ccg	gac	aga	ctg	tct	tct	agc	tgt	tgt	cat	aca	1177	
Leu	Gln	Gly	Phe	Thr	Pro	Asp	Arg	Leu	Ser	Ser	Ser	Cys	Cys	His	Thr		
	335				340					345					350		
gtt	cca	gat	ttc	cac	tta	tca	agc	cca	gct	aag	aat	ttc	ttt	aag	aaa	1225	
Val	Pro	Asp	Phe	His	Leu	Ser	Ser	Pro	Ala	Lys	Asn	Phe	Phe	Lys	Lys		
			355						360					365			
gca	gct	gct	gct	ctt	ttt	ggg	ggc	aaa	aaa	gac	aaa	gca	aga	tat	att	1273	
Ala	Ala	Ala	Ala	Leu	Phe	Gly	Gly	Lys	Lys	Asp	Lys	Ala	Arg	Tyr	Ile		
			370					375					380				
gac	aca	cat	aat	aga	gtg	tct	aaa	gaa	gat	gaa	gac	atc	tac	aag	ctt	1321	
Asp	Thr	His	Asn	Arg	Val	Ser	Lys	Glu	Asp	Glu	Asp	Ile	Tyr	Lys	Leu		
		385				390						395					
agg	cat	gat	ttg	aaa	aag	act	tca	ata	act	cag	caa	ccc	agc	aaa	cac	1369	
Arg	His	Asp	Leu	Lys	Lys	Thr	Ser	Ile	Thr	Gln	Gln	Pro	Ser	Lys	His		
	400					405					410						
agg	aca	gat	gag	gag	ctc	cag	cca	cct	acc	acc	aca	gtt	gcc	agg	tct	1417	
Arg	Thr	Asp	Glu	Glu	Leu	Gln	Pro	Pro	Thr	Thr	Thr	Val	Ala	Arg	Ser		
	415				420				425						430		
gga	aca	ccc	gca	gta	gaa	aac	aag	cag	cag	att	ggg	gat	gct	att	cgg	1465	
Gly	Thr	Pro	Ala	Val	Glu	Asn	Lys	Gln	Gln	Ile	Gly	Asp	Ala	Ile	Arg		
			435					440						445			
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Met	Ile	Val	Arg	Gly	Thr	Leu	Gly	Ser	Cys	Ser	Ser	Ser	Ser	Ser	Glu	Cys	
			450					455						460			
ctt	gaa	gac	agt	acc	atg	gga	agt	gtt	gca	gac	aca	gtg	gca	agg	gtt	1561	
Leu	Glu	Asp	Ser	Thr	Met	Gly	Ser	Val	Ala	Asp	Thr	Val	Ala	Arg	Val		
		465				470						475					
ctt	cgg	gga	tgt	ctg	gaa	aac	atg	ccg	gaa	gct	gat	tgc	att	ccc	aaa	1609	
Leu	Arg	Gly	Cys	Leu	Glu	Asn	Met	Pro	Glu	Ala	Asp	Cys	Ile	Pro	Lys		
	480					485					490						
gag	cag	ctg	agc	aca	tca	ttt	cag	tgg	gtc	acc	aaa	tgg	gtt	gat	tac	1657	
Glu	Gln	Leu	Ser	Thr	Ser	Phe	Gln	Trp	Val	Thr	Lys	Trp	Val	Asp	Tyr		
	495				500				505						510		
tct	aac	aaa	tat	ggc	ttt	ggg	tac	cag	ctc	tca	gac	cac	acc	gtc	ggg	1705	
Ser	Asn	Lys	Tyr	Gly	Phe	Gly	Tyr	Gln	Leu	Ser	Asp	His	Thr	Val	Gly		
			515					520						525			
gtc	ctt	ttc	aac	aat	ggg	gct	cac	atg	agc	ctc	ctt	cca	gac	aaa	aaa	1753	
Val	Leu	Phe	Asn	Asn	Gly	Ala	His	Met	Ser	Leu	Leu	Pro	Asp	Lys	Lys		
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2783

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<212> PRT  
<213> Homo sapiens

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Tyr Pro Thr Pro Pro Ala Pro Met Pro Gly Pro Thr Thr Gly Leu Val  
35 40 45  
Thr Gly Pro Asp Gly Lys Gly Met Asn Pro Pro Ser Tyr Tyr Thr Gln  
50 55 60  
Pro Ala Pro Ile Pro Asn Asn Asn Pro Ile Thr Val Gln Thr Val Tyr  
65 70 75 80  
Val Gln His Pro Ile Thr Phe Leu Asp Arg Pro Ile Gln Met Cys Cys  
85 90 95  
Pro Ser Cys Asn Lys Met Ile Val Ser Gln Leu Ser Tyr Asn Ala Gly  
100 105 110  
Ala Leu Thr Trp Leu Ser Cys Gly Ser Leu Cys Leu Leu Gly Cys Ile  
115 120 125  
Ala Gly Cys Cys Phe Ile Pro Phe Cys Val Asp Ala Leu Gln Asp Val  
130 135 140  
Asp His Tyr Cys Pro Asn Cys Arg Ala Leu Leu Gly Thr Tyr Lys Arg  
145 150 155 160  
Leu

<210> 104  
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<212> DNA  
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<222> (70)..(552)

<400> 104  
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Met Ser Val Pro Gly Pro Tyr Gln Ala Ala Thr Gly Pro Ser

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tca gca cca tcc gca cct cca tcc tat gaa gag aca gtg gct gtt aac			159
Ser Ala Pro Ser Ala Pro Pro Ser Tyr Glu Glu Thr Val Ala Val Asn			
15	20	25	30
agt tat tac ccc aca cct cca gct ccc atg cct ggg cca act acg ggg			207
Ser Tyr Tyr Pro Thr Pro Pro Ala Pro Met Pro Gly Pro Thr Thr Gly			
	35	40	45
ctt gtg acg ggg cct gat ggg aag ggc atg aat cct cct tcg tat tat			255
Leu Val Thr Gly Pro Asp Gly Lys Gly Met Asn Pro Pro Ser Tyr Tyr			
	50	55	60
acc cag cca gcg ccc atc ccc aat aac aat cca att acc gtg cag acg			303
Thr Gln Pro Ala Pro Ile Pro Asn Asn Asn Pro Ile Thr Val Gln Thr			
	65	70	75
gtc tac gtg cag cac ccc atc acc ttt ttg gac cgc cct atc caa atg			351
Val Tyr Val Gln His Pro Ile Thr Phe Leu Asp Arg Pro Ile Gln Met			
	80	85	90
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Cys Cys Pro Ser Cys Asn Lys Met Ile Val Ser Gln Leu Ser Tyr Asn			
	95	100	105
gcc ggt gct ctg acc tgg ctg tcc tgc ggg agc ctg tgc ctg ctg ggg			447
Ala Gly Ala Leu Thr Trp Leu Ser Cys Gly Ser Leu Cys Leu Leu Gly			
	115	120	125
tgc ata gcg ggc tgc tgc ttc atc ccc ttc tgc gtg gat gcc ctg cag			495
Cys Ile Ala Gly Cys Cys Phe Ile Pro Phe Cys Val Asp Ala Leu Gln			
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Asp Val Asp His Tyr Cys Pro Asn Cys Arg Ala Leu Leu Gly Thr Tyr			
	145	150	155
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Lys Arg Leu			
160			
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<400> 105

Met	Ser	Val	Pro	Gly	Pro	Tyr	Gln	Ala	Ala	Thr	Gly	Pro	Ser	Ser	Ala
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Pro	Ser	Ala	Pro	Pro	Ser	Tyr	Glu	Glu	Thr	Val	Ala	Val	Asn	Ser	Tyr
			20					25					30		
Tyr	Pro	Thr	Pro	Pro	Ala	Pro	Met	Pro	Gly	Pro	Thr	Thr	Gly	Leu	Val
		35					40					45			
Thr	Gly	Pro	Asp	Gly	Lys	Gly	Met	Asn	Pro	Pro	Ser	Tyr	Tyr	Thr	Gln
	50					55					60				
Pro	Ala	Pro	Ile	Pro	Asn	Asn	Asn	Pro	Ile	Thr	Val	Gln	Thr	Val	Tyr
	65				70					75					80
Val	Gln	His	Pro	Ile	Thr	Phe	Leu	Asp	Arg	Pro	Val	Gln	Met	Cys	Cys
			85						90					95	
Pro	Ser	Cys	Asn	Lys	Met	Ile	Val	Ser	Gln	Leu	Ser	Tyr	Asn	Ala	Gly
			100					105					110		
Ala	Leu	Thr	Trp	Leu	Ser	Cys	Gly	Ser	Leu	Cys	Leu	Leu	Gly	Cys	Ile
		115					120						125		
Ala	Gly	Cys	Cys	Phe	Ile	Pro	Phe	Cys	Val	Asp	Ala	Leu	Gln	Asp	Val
	130					135					140				
Asp	His	Tyr	Cys	Pro	Asn	Cys	Arg	Ala	Leu	Leu	Gly	Thr	Tyr	Lys	Arg
145					150					155					160
Leu															

<210> 106  
 <211> 1589  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (70)..(552)

<400> 106  
 ccttttctcg gggcgccccga aggccagctc agacctcccg gctcgacagg cggcgcgggc 60  
 ggcggtataa atg tcg gtt cca gga cct tac cag gcg gcc act ggg cct tcc 111  
           Met Ser Val Pro Gly Pro Tyr Gln Ala Ala Thr Gly Pro Ser  
           1                  5                  10  
 tca gca cca tcc gca cct cca tcc tat gaa gag aca gtg gct gtt aac 159  
 Ser Ala Pro Ser Ala Pro Pro Ser Tyr Glu Glu Thr Val Ala Val Asn  
   15                  20                  25                  30  
 agt tat tac ccc aca cct cca gct ccc atg cct ggg cca act acg ggg 207  
 Ser Tyr Tyr Pro Thr Pro Pro Ala Pro Met Pro Gly Pro Thr Thr Gly  
                   35                  40                  45  
 ctt gtg acg ggg cct gat ggg aag ggc atg aat cct cct tcg tat tat 255  
 Leu Val Thr Gly Pro Asp Gly Lys Gly Met Asn Pro Pro Ser Tyr Tyr  
           50                  55                  60  
 acc cag cca gcg ccc atc ccc aat aac aat cca att acc gtg cag acg 303  
 Thr Gln Pro Ala Pro Ile Pro Asn Asn Asn Pro Ile Thr Val Gln Thr  
           65                  70                  75  
 gtc tac gtg cag cac ccc atc acc ttt ttg gac cgc cct gtc caa atg 351  
 Val Tyr Val Gln His Pro Ile Thr Phe Leu Asp Arg Pro Val Gln Met  
   80                  85                  90  
 tgt tgt cct tcc tgc aac aag atg atc gtg agt cag ctg tcc tat aac 399  
 Cys Cys Pro Ser Cys Asn Lys Met Ile Val Ser Gln Leu Ser Tyr Asn  
   95                  100                  105                  110  
 gcc ggt gct ctg acc tgg ctg tcc tgc ggg agc ctg tgc ctg ctg ggg 447  
 Ala Gly Ala Leu Thr Trp Leu Ser Cys Gly Ser Leu Cys Leu Leu Gly  
           115                  120                  125  
 tgc ata gcg ggc tgc tgc ttc atc ccc ttc tgc gtg gat gcc ctg cag 495  
 Cys Ile Ala Gly Cys Cys Phe Ile Pro Phe Cys Val Asp Ala Leu Gln  
           130                  135                  140  
 gac gtg gac cat tac tgt ccc aac tgc aga gct ctc ctg ggc acc tac 543  
 Asp Val Asp His Tyr Cys Pro Asn Cys Arg Ala Leu Leu Gly Thr Tyr  
           145                  150                  155  
 aag cgt ttg taggactcag ccagacgtgg agggagccgg gtgccgcagg 592  
 Lys Arg Leu



160

aagtcctttc cacctctcat ccagcttcac gcctggtgga ggttctgccc tgggtggtctc 652  
acctctccag ggggcccacc ttcattgtctt cttttggggg gaatacgtcg caaaactaac 712  
aaatctccaa accccagaaa ttgctgcttg gagtcgtgca taggacttgc aaagacattc 772  
cccttgagtg tcagttccac ggtttcctgc ctccctgaga ccctgagtcc tgccatctaa 832  
ctgtgatcat tgccctatcc gaatatcttc ctgtgatctg ccatcagtgg ctcttttttc 892  
ctgcttccat gggcctttct ggtggcagtc tcaaactgag aagccacagt tgccttattt 952  
ttgaggctgt tctgcccaga gctcggtga accagccttt agtgcctacc attatcttat 1012  
ccgtctcttc ccgtccctga tgacaaagat cttgccttac agactttaca ggcttggtctt 1072  
tgagattctg taactgcaga cttcattagc acacagattc actttaattt ctttaattttt 1132  
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tgccagatct tcagtgcctc ttccatatac gggatttttt tctcatagag taattatatg 1312  
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aaaaaaaaa gagatggggg cttactatgt tgcccaggct ggtgtcgaac tcctgggctc 1432  
aagcgatcct tctgccttgg cctccogaag tgctgggatt gcaggcataa gctaccatgc 1492  
tgggcctgaa cataatttca agaggaggat ttataaaacc attttctgta atcaaattgat 1552  
tgggtgtcatt ttcccatttg ccaatgtagt ctcaatt 1589

&lt;210&gt; 107

&lt;211&gt; 249

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 107

Met	Ala	Ser	Ala	Ser	Gly	Ala	Met	Ala	Lys	His	Glu	Gln	Ile	Leu	Val
1				5					10					15	
Leu	Asp	Pro	Pro	Thr	Asp	Leu	Lys	Phe	Lys	Gly	Pro	Phe	Thr	Asp	Val
			20					25					30		
Val	Thr	Thr	Asn	Leu	Lys	Leu	Arg	Asn	Pro	Ser	Asp	Arg	Lys	Val	Cys
		35					40					45			
Phe	Lys	Val	Lys	Thr	Thr	Ala	Pro	Arg	Arg	Tyr	Cys	Val	Arg	Pro	Asn
	50					55					60				
Ser	Gly	Ile	Ile	Asp	Pro	Gly	Ser	Thr	Val	Thr	Val	Ser	Val	Met	Leu
65					70					75				80	

Gln	Pro	Phe	Asp	Tyr 85	Asp	Pro	Asn	Glu	Lys 90	Ser	Lys	His	Lys	Phe 95	Met
Val	Gln	Thr	Ile 100	Phe	Ala	Pro	Pro	Asn 105	Thr	Ser	Asp	Met	Glu 110	Ala	Val
Trp	Lys	Glu 115	Ala	Lys	Pro	Asp	Glu 120	Leu	Met	Asp	Ser	Lys 125	Leu	Arg	Cys
Val	Phe 130	Glu	Met	Pro	Asn	Glu 135	Asn	Asp	Lys	Leu	Asn 140	Asp	Met	Glu	Pro
Ser 145	Lys	Ala	Val	Pro	Leu 150	Asn	Ala	Ser	Lys	Gln 155	Asp	Gly	Pro	Met	Pro 160
Lys	Pro	His	Ser	Val 165	Ser	Leu	Asn	Asp	Thr 170	Glu	Thr	Arg	Lys	Leu 175	Met
Glu	Glu	Cys	Lys 180	Arg	Leu	Gln	Gly	Glu 185	Met	Met	Lys	Leu	Ser 190	Glu	Glu
Asn	Arg	His 195	Leu	Arg	Asp	Glu	Gly 200	Leu	Arg	Leu	Arg	Lys 205	Val	Ala	His
Ser	Asp 210	Lys	Pro	Gly	Ser	Thr 215	Ser	Thr	Ala	Ser	Phe 220	Arg	Asp	Asn	Val
Thr 225	Ser	Pro	Leu	Pro	Ser 230	Leu	Leu	Val	Val	Ile 235	Ala	Ala	Ile	Phe	Ile 240
Gly	Phe	Phe	Leu	Gly 245	Lys	Phe	Ile	Leu							

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<210> 108
<211> 1595
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> (232)..(978)
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<400> 108
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gaccagcgg gtggcccacc gaaccggtga cacagcggca ggcgttaggg ctcgaggacc 120
gcgagcctgg cctcgctcta gagctcggcc gagccgtcgc cgccgtcgtc ccccgccccc 180
agtcagcaaa ccgcgcgcgc gggcgcgccc ccgctctcgc ctgtctctcc g atg gcg 237
                                     Met Ala
                                     1
tcc gcc tca ggg gcc atg gcg aag cac gag cag atc ctg gtc ctc gat 285
Ser Ala Ser Gly Ala Met Ala Lys His Glu Gln Ile Leu Val Leu Asp

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5	10	15	
ccg ccc aca gac ctc aaa ttc aaa ggc ccc ttc aca gat gta gtc act Pro Pro Thr Asp Leu Lys Phe Lys Gly Pro Phe Thr Asp Val Val Thr 20 25 30			333
aca aat ctt aaa ttg cga aat cca tcg gat aga aaa gtg tgt ttc aaa Thr Asn Leu Lys Leu Arg Asn Pro Ser Asp Arg Lys Val Cys Phe Lys 35 40 45 50			381
gtg aag act aca gca cct cgc cgg tac tgt gtg agg ccc aac agt gga Val Lys Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly 55 60 65			429
att att gac cca ggg tca act gtg act gtt tca gta atg cta cag ccc Ile Ile Asp Pro Gly Ser Thr Val Thr Val Ser Val Met Leu Gln Pro 70 75 80			477
ttt gac tat gat ccg aat gaa aag agt aaa cac aag ttt atg gta cag Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val Gln 85 90 95			525
aca att ttt gct cca cca aac act tca gat atg gaa gct gtg tgg aaa Thr Ile Phe Ala Pro Pro Asn Thr Ser Asp Met Glu Ala Val Trp Lys 100 105 110			573
gag gca aaa cct gat gaa tta atg gat tcc aaa ttg aga tgc gta ttt Glu Ala Lys Pro Asp Glu Leu Met Asp Ser Lys Leu Arg Cys Val Phe 115 120 125 130			621
gaa atg ccc aat gaa aat gat aaa ttg aat gat atg gaa cct agc aaa Glu Met Pro Asn Glu Asn Asp Lys Leu Asn Asp Met Glu Pro Ser Lys 135 140 145			669
gct gtt cca ctg aat gca tct aag caa gat gga cct atg cca aaa cca Ala Val Pro Leu Asn Ala Ser Lys Gln Asp Gly Pro Met Pro Lys Pro 150 155 160			717
cac agt gtt tca ctt aat gat acc gaa aca agg aaa cta atg gaa gag His Ser Val Ser Leu Asn Asp Thr Glu Thr Arg Lys Leu Met Glu Glu 165 170 175			765
tgt aaa aga ctt cag gga gaa atg atg aag cta tca gaa gaa aat cgg Cys Lys Arg Leu Gln Gly Glu Met Met Lys Leu Ser Glu Glu Asn Arg 180 185 190			813
cac ctg aga gat gaa ggt tta agg ctc aga aag gta gca cat tcg gat His Leu Arg Asp Glu Gly Leu Arg Leu Arg Lys Val Ala His Ser Asp 195 200 205 210			861
aaa cct gga tca acc tca act gca tcc ttc aga gat aat gtc acc agt Lys Pro Gly Ser Thr Ser Thr Ala Ser Phe Arg Asp Asn Val Thr Ser 215 220 225			909
cct ctt cct tca ctt ctt gtt gta att gca gcc att ttc att gga ttc Pro Leu Pro Ser Leu Leu Val Val Ile Ala Ala Ile Phe Ile Gly Phe 230 235 240			957

ttt cta ggg aaa ttc atc ttg tagagtgaag catgcagagt gctgtttctt 1008  
Phe Leu Gly Lys Phe Ile Leu  
245

tttttttttt tctcttgacc agaaaaagat ttgtttacct accatttcat tggtagtatg 1068  
gcccacggtg accatTTTTT tgtgtgtaca ggcTcatata ggctttgcct ttaatgatct 1128  
cttacggtta gaaaacacaa taaaaacaaa ctgttcggct actggacagg ttgtatatta 1188  
ccagatcatc actagcagat gtcagttgca cattgagtc tttatgaaat tcataaataa 1248  
agaattgttc tttctttgtg gttttaataa gagttcaaga attgttcaga gtcttgtaaa 1308  
tgttattttta ataatccctt taaattttat ctgttgctgt tacctcttga aatatgattt 1368  
atttagattg ctaatcccac tcattcagga aatgccaaga ggtattcctt ggggaaatgg 1428  
tgcctcttac agtgtaaatt tttctcctt tacctttgct aatatcatgg cagaattttt 1488  
cttatccctt gtgaggcagt tggtgactga gtttttcac cttacaatcc tgtcccatgg 1548  
tatttaacat aaaaaaaaaat aaaactgtta acagattctt gctcgat 1595

<210> 109  
<211> 540  
<212> PRT  
<213> Homo sapiens

<400> 109  
Met Gly Thr Thr Ala Arg Ala Ala Leu Val Leu Thr Tyr Leu Ala Val  
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Ala Ser Ala Ala Ser Glu Gly Gly Phe Thr Ala Thr Gly Gln Arg Gln  
20 25 30  
Leu Arg Pro Glu His Phe Gln Glu Val Gly Tyr Ala Ala Pro Pro Ser  
35 40 45  
Pro Pro Leu Ser Arg Ser Leu Pro Met Asp His Pro Asp Ser Ser Gln  
50 55 60  
His Gly Pro Pro Phe Glu Gly Gln Ser Gln Val Gln Pro Pro Pro Ser  
65 70 75 80  
Gln Glu Ala Thr Pro Leu Gln Gln Glu Lys Leu Leu Pro Ala Gln Leu  
85 90 95  
Pro Ala Glu Lys Glu Val Gly Pro Pro Leu Pro Gln Glu Ala Val Pro  
100 105 110  
Leu Gln Lys Glu Leu Pro Ser Leu Gln His Pro Asn Glu Gln Lys Glu  
115 120 125  
Gly Thr Pro Ala Pro Phe Gly Asp Gln Ser His Pro Glu Pro Glu Ser

130	135	140
Trp Asn Ala Ala Gln His Cys Gln Gln Asp Arg Ser Gln Gly Gly Trp 145 150 155 160		
Gly His Arg Leu Asp Gly Phe Pro Pro Gly Arg Pro Ser Pro Asp Asn 165 170 175		
Leu Asn Gln Ile Cys Leu Pro Asn Arg Gln His Val Val Tyr Gly Pro 180 185 190		
Trp Asn Leu Pro Gln Ser Ser Tyr Ser His Leu Thr Arg Gln Gly Glu 195 200 205		
Thr Leu Asn Phe Leu Glu Ile Gly Tyr Ser Arg Cys Cys His Cys Arg 210 215 220		
Ser His Thr Asn Arg Leu Glu Cys Ala Lys Leu Val Trp Glu Glu Ala 225 230 235 240		
Met Ser Arg Phe Cys Glu Ala Glu Phe Ser Val Lys Thr Arg Pro His 245 250 255		
Trp Cys Cys Thr Arg Gln Gly Glu Ala Arg Phe Ser Cys Phe Gln Glu 260 265 270		
Glu Ala Pro Gln Pro His Tyr Gln Leu Arg Ala Cys Pro Ser His Gln 275 280 285		
Pro Asp Ile Ser Ser Gly Leu Glu Leu Pro Phe Pro Pro Gly Val Pro 290 295 300		
Thr Leu Asp Asn Ile Lys Asn Ile Cys His Leu Arg Arg Phe Arg Ser 305 310 315 320		
Val Pro Arg Asn Leu Pro Ala Thr Asp Pro Leu Gln Arg Glu Leu Leu 325 330 335		
Ala Leu Ile Gln Leu Glu Arg Glu Phe Gln Arg Cys Cys Arg Gln Gly 340 345 350		
Asn Asn His Thr Cys Thr Trp Lys Ala Trp Glu Asp Thr Leu Asp Lys 355 360 365		
Tyr Cys Asp Arg Glu Tyr Ala Val Lys Thr His His His Leu Cys Cys 370 375 380		
Arg His Pro Pro Ser Pro Thr Arg Asp Glu Cys Phe Ala Arg Arg Ala 385 390 395 400		
Pro Tyr Pro Asn Tyr Asp Arg Asp Ile Leu Thr Ile Asp Ile Gly Arg 405 410 415		
Val Thr Pro Asn Leu Met Gly His Leu Cys Gly Asn Gln Arg Val Leu 420 425 430		
Thr Lys His Lys His Ile Pro Gly Leu Ile His Asn Met Thr Ala Arg		

435						440						445					
Cys	Cys	Asp	Leu	Pro	Phe	Pro	Glu	Gln	Ala	Cys	Cys	Ala	Glu	Glu	Glu		
	450					455					460						
Lys	Leu	Thr	Phe	Ile	Asn	Asp	Leu	Cys	Gly	Pro	Arg	Arg	Asn	Ile	Trp		
465					470					475					480		
Arg	Asp	Pro	Ala	Leu	Cys	Cys	Tyr	Leu	Ser	Pro	Gly	Asp	Glu	Gln	Val		
				485					490					495			
Asn	Cys	Phe	Asn	Ile	Asn	Tyr	Leu	Arg	Asn	Val	Ala	Leu	Val	Ser	Gly		
			500					505					510				
Asp	Thr	Glu	Asn	Ala	Lys	Gly	Gln	Gly	Glu	Gln	Gly	Ser	Thr	Gly	Gly		
		515					520					525					
Thr	Asn	Ile	Ser	Ser	Thr	Ser	Glu	Pro	Lys	Glu	Glu						
	530					535					540						

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<210> 110
<211> 1810
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> (102)..(1721)
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gaggacccac ctctgagtgt ccagtgggtca gttgccccag g atg ggg acc aca gcc 116
                               Met Gly Thr Thr Ala
                               1       5
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aga gca gcc ttg gtc ttg acc tat ttg gct gtt gct tct gct gcc tct 164  
Arg Ala Ala Leu Val Leu Thr Tyr Leu Ala Val Ala Ser Ala Ala Ser  
10 15 20

gag gga ggc ttc acg gct aca gga cag agg cag ctg agg cca gag cac 212  
Glu Gly Gly Phe Thr Ala Thr Gly Gln Arg Gln Leu Arg Pro Glu His  
25 30 35

ttt caa gaa gtt ggc tac gca gct ccc ccc tcc cca ccc cta tcc cga 260  
Phe Gln Glu Val Gly Tyr Ala Ala Pro Pro Ser Pro Pro Leu Ser Arg  
40 45 50

agc ctc ccc atg gat cac cct gac tcc tct cag cat ggc cct ccc ttt 308  
 Ser Leu Pro Met Asp His Pro Asp Ser Ser Gln His Gly Pro Pro Phe  
 55 60 65

gag gga cag agt caa gtg cag ccc cct ccc tct cag gag gcc acc cct 356  
Glu Gly Gln Ser Gln Val Gln Pro Pro Pro Ser Gln Glu Ala Thr Pro  
70 75 80 85

ctc	caa	cag	gaa	aag	ctg	cta	cct	gcc	caa	ctc	cct	gct	gaa	aag	gaa	404
Leu	Gln	Gln	Glu	Lys	Leu	Leu	Pro	Ala	Gln	Leu	Pro	Ala	Glu	Lys	Glu	
				90					95					100		
gtg	ggt	ccc	cct	ctc	cct	cag	gaa	gct	gtc	ccc	ctc	caa	aaa	gag	ctg	452
Val	Gly	Pro	Pro	Leu	Pro	Gln	Glu	Ala	Val	Pro	Leu	Gln	Lys	Glu	Leu	
			105					110					115			
ccc	tct	ctc	cag	cac	ccc	aat	gaa	cag	aag	gaa	gga	acg	cca	gct	cca	500
Pro	Ser	Leu	Gln	His	Pro	Asn	Glu	Gln	Lys	Glu	Gly	Thr	Pro	Ala	Pro	
		120						125				130				
ttt	ggg	gac	cag	agc	cat	cca	gaa	cct	gag	tcc	tgg	aat	gca	gcc	cag	548
Phe	Gly	Asp	Gln	Ser	His	Pro	Glu	Pro	Glu	Ser	Trp	Asn	Ala	Ala	Gln	
	135					140					145					
cac	tgc	caa	cag	gac	cgg	tcc	caa	ggg	ggc	tgg	ggc	cac	cgg	ctg	gat	596
His	Cys	Gln	Gln	Asp	Arg	Ser	Gln	Gly	Gly	Trp	Gly	His	Arg	Leu	Asp	
	150				155					160					165	
ggc	ttc	ccc	cct	ggg	cgg	cct	tct	cca	gac	aat	ctg	aac	caa	atc	tgc	644
Gly	Phe	Pro	Pro	Gly	Arg	Pro	Ser	Pro	Asp	Asn	Leu	Asn	Gln	Ile	Cys	
				170					175					180		
ctt	cct	aac	cgt	cag	cat	gtg	gta	tat	ggt	ccc	tgg	aac	cta	cca	cag	692
Leu	Pro	Asn	Arg	Gln	His	Val	Val	Tyr	Gly	Pro	Trp	Asn	Leu	Pro	Gln	
			185					190					195			
tcc	agc	tac	tcc	cac	ctc	act	cgc	cag	ggt	gag	acc	ctc	aat	ttc	ctg	740
Ser	Ser	Tyr	Ser	His	Leu	Thr	Arg	Gln	Gly	Glu	Thr	Leu	Asn	Phe	Leu	
		200					205					210				
gag	att	gga	tat	tcc	cgc	tgc	tgc	cac	tgc	cgc	agc	cac	aca	aac	cgc	788
Glu	Ile	Gly	Tyr	Ser	Arg	Cys	Cys	His	Cys	Arg	Ser	His	Thr	Asn	Arg	
	215					220					225					
cta	gag	tgt	gcc	aaa	ctt	gtg	tgg	gag	gaa	gca	atg	agc	cga	ttc	tgt	836
Leu	Glu	Cys	Ala	Lys	Leu	Val	Trp	Glu	Glu	Ala	Met	Ser	Arg	Phe	Cys	
	230				235					240					245	
gag	gcc	gag	ttc	tcg	gtc	aag	acc	cga	ccc	cac	tgg	tgc	tgc	acg	cgg	884
Glu	Ala	Glu	Phe	Ser	Val	Lys	Thr	Arg	Pro	His	Trp	Cys	Cys	Thr	Arg	
				250					255					260		
cag	ggg	gag	gct	cgg	ttc	tcc	tgc	ttc	cag	gag	gaa	gct	ccc	cag	cca	932
Gln	Gly	Glu	Ala	Arg	Phe	Ser	Cys	Phe	Gln	Glu	Glu	Ala	Pro	Gln	Pro	
				265				270					275			
cac	tac	cag	ctc	cgg	gcc	tgc	ccc	agc	cat	cag	cct	gat	att	tcc	tcg	980
His	Tyr	Gln	Leu	Arg	Ala	Cys	Pro	Ser	His	Gln	Pro	Asp	Ile	Ser	Ser	
		280					285					290				
ggt	ctt	gag	ctg	cct	ttc	cct	cct	ggg	gtg	ccc	aca	ttg	gac	aat	atc	1028
Gly	Leu	Glu	Leu	Pro	Phe	Pro	Pro	Gly	Val	Pro	Thr	Leu	Asp	Asn	Ile	
	295					300					305					
aag	aac	atc	tgc	cac	ctg	agg	cgc	ttc	cgc	tct	gtg	cca	cgc	aac	ctg	1076

Lys	Asn	Ile	Cys	His	Leu	Arg	Arg	Phe	Arg	Ser	Val	Pro	Arg	Asn	Leu		
310					315					320					325		
cca	gct	act	gac	ccc	cta	caa	agg	gag	ctg	ctg	gca	ctg	atc	cag	ctg	1124	
Pro	Ala	Thr	Asp	Pro	Leu	Gln	Arg	Glu	Leu	Leu	Ala	Leu	Ile	Gln	Leu		
				330					335					340			
gag	agg	gag	ttc	cag	cgc	tgc	tgc	cgc	cag	ggg	aac	aat	cac	acc	tgt	1172	
Glu	Arg	Glu	Phe	Gln	Arg	Cys	Cys	Arg	Gln	Gly	Asn	Asn	His	Thr	Cys		
			345					350					355				
aca	tgg	aag	gcc	tgg	gag	gat	acc	ctt	gac	aaa	tac	tgt	gac	cgg	gag	1220	
Thr	Trp	Lys	Ala	Trp	Glu	Asp	Thr	Leu	Asp	Lys	Tyr	Cys	Asp	Arg	Glu		
		360					365						370				
tat	gct	gtg	aag	acc	cac	cac	cac	ttg	tgt	tgc	cgc	cac	cct	ccc	agc	1268	
Tyr	Ala	Val	Lys	Thr	His	His	His	Leu	Cys	Cys	Arg	His	Pro	Pro	Ser		
		375					380					385					
cct	act	cgg	gat	gag	tgc	ttt	gcc	cgt	cgg	gct	cct	tac	ccc	aac	tat	1316	
Pro	Thr	Arg	Asp	Glu	Cys	Phe	Ala	Arg	Arg	Ala	Pro	Tyr	Pro	Asn	Tyr		
390					395					400					405		
gac	cgg	gac	atc	ttg	acc	att	gac	atc	ggg	cga	gtc	acc	ccc	aac	ctc	1364	
Asp	Arg	Asp	Ile	Leu	Thr	Ile	Asp	Ile	Gly	Arg	Val	Thr	Pro	Asn	Leu		
				410					415					420			
atg	ggc	cac	ctc	tgt	gga	aac	caa	aga	gtt	ctc	acc	aag	cat	aaa	cat	1412	
Met	Gly	His	Leu	Cys	Gly	Asn	Gln	Arg	Val	Leu	Thr	Lys	His	Lys	His		
			425					430					435				
att	cct	ggg	ctg	atc	cac	aac	atg	act	gcc	cgc	tgc	tgt	gac	ctg	cca	1460	
Ile	Pro	Gly	Leu	Ile	His	Asn	Met	Thr	Ala	Arg	Cys	Cys	Asp	Leu	Pro		
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Phe	Pro	Glu	Gln	Ala	Cys	Cys	Ala	Glu	Glu	Glu	Lys	Leu	Thr	Phe	Ile		
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Cys	Cys	Tyr	Leu	Ser	Pro	Gly	Asp	Glu	Gln	Val	Asn	Cys	Phe	Asn	Ile		
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Asn	Tyr	Leu	Arg	Asn	Val	Ala	Leu	Val	Ser	Gly	Asp	Thr	Glu	Asn	Ala		
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Thr	Ser	Glu	Pro	Lys	Glu	Glu											





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Cys	Cys	Asp	Leu	Pro	Phe	Pro	Glu	Gln	Ala	Cys	Cys	Ala	Glu	Glu	Glu	
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 Ser Leu Pro Met Asp His Pro Asp Ser Ser Gln His Gly Pro Pro Phe  
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 135 140 145  
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Glu	Ile	Gly	Tyr	Ser	Arg	Cys	Cys	His	Cys	Arg	Ser	His	Thr	Asn	Arg	
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Gln	Gly	Glu	Ala	Arg	Phe	Ser	Cys	Phe	Gln	Glu	Glu	Ala	Pro	Gln	Pro	
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Lys	Asn	Ile	Cys	His	Leu	Arg	Arg	Phe	Arg	Ser	Val	Pro	Arg	Asn	Leu	
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Glu	Arg	Glu	Phe	Gln	Arg	Cys	Cys	Arg	Gln	Gly	Asn	Asn	His	Thr	Cys	
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Thr	Trp	Lys	Ala	Trp	Glu	Asp	Thr	Leu	Asp	Lys	Tyr	Cys	Asp	Arg	Glu	
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tat	gct	gtg	aag	acc	cac	cac	cac	ttg	tgt	tgc	cgc	cac	cct	ccc	agc	1268
Tyr	Ala	Val	Lys	Thr	His	His	His	Leu	Cys	Cys	Arg	His	Pro	Pro	Ser	
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cct	act	cgg	gat	gag	tgc	ttt	gcc	cgt	cgg	gct	cct	tac	ccc	aac	tat	1316
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      35             40             45
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Met Gly Asp Trp Ser Ala Leu Gly Lys Leu Leu  
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Asp Lys Val Gln Ala Tyr Ser Thr Ala Gly Gly Lys Val Trp Leu Ser  
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Val Leu Phe Ile Phe Arg Ile Leu Leu Gly Thr Ala Val Glu Ser  
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Ala Trp Gly Asp Glu Gln Ser Ala Phe Arg Cys Asn Thr Gln Gln Pro  
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Gly Cys Glu Asn Val Cys Tyr Asp Lys Ser Phe Pro Ile Ser His Val  
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Arg Phe Trp Val Leu Gln Ile Ile Phe Val Ser Val Pro Thr Leu Leu  
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tac ctg gct cat gtg ttc tat gtg atg cga aag gaa gag aaa ctg aac 521  
Tyr Leu Ala His Val Phe Tyr Val Met Arg Lys Glu Glu Lys Leu Asn  
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aag aaa gag gaa gaa ctc aag gtt gcc caa act gat ggt gtc aat gtg 569  
Lys Lys Glu Glu Glu Leu Lys Val Ala Gln Thr Asp Gly Val Asn Val  
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Glu Glu His Gly Lys Val Lys Met Arg Gly Gly Leu Leu Arg Thr Tyr	
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Ile Gln Trp Tyr Ile Tyr Gly Phe Ser Leu Ser Ala Val Tyr Thr Cys	
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Lys Arg Asp Pro Cys Pro His Gln Val Asp Cys Phe Leu Ser Arg Pro	
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195 200 205  
Phe Ile Ile Phe Met Leu Val Val Ser Leu Val Ser Leu Ala Leu Asn  
210 215 220

Ile Ile Glu Leu Phe Tyr Val Phe Phe Lys Gly Val Lys Asp Arg Val  
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Gly Cys Glu Asn Val Cys Tyr Asp Lys Ser Phe Pro Ile Ser His Val  
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cgc ttc tgg gtc ctg cag atc ata ttt gtg tct gta ccc aca ctc ttg 473  
Arg Phe Trp Val Leu Gln Ile Ile Phe Val Ser Val Pro Thr Leu Leu  
80 85 90

tac ctg gct cat gtg ttc tat gtg atg cga aag gaa gag aaa ctg aac 521  
Tyr Leu Ala His Val Phe Tyr Val Met Arg Lys Glu Glu Lys Leu Asn  
95 100 105

aag aaa gag gaa gaa ctc aag gtt gcc caa act gat ggt gtc aat gtg 569  
Lys Lys Glu Glu Glu Leu Lys Val Ala Gln Thr Asp Gly Val Asn Val  
110 115 120

gac atg cac ttg aag cag att gag ata aag aag ttc aag tac ggt att 617  
Asp Met His Leu Lys Gln Ile Glu Ile Lys Lys Phe Lys Tyr Gly Ile  
125 130 135

gaa gag cat ggt aag gtg aaa atg cga ggg ggg ttg ctg cga acc tac 665  
Glu Glu His Gly Lys Val Lys Met Arg Gly Gly Leu Leu Arg Thr Tyr  
140 145 150 155

atc atc agt atc ctc ttc aag tct atc ttt gag gtg gcc ttc ttg ctg 713  
Ile Ile Ser Ile Leu Phe Lys Ser Ile Phe Glu Val Ala Phe Leu Leu  
160 165 170

atc cag tgg tac atc tat gga ttc agc ttg agt gct gtt tac act tgc 761  
Ile Gln Trp Tyr Ile Tyr Gly Phe Ser Leu Ser Ala Val Tyr Thr Cys  
175 180 185

aaa aga gat ccc tgc cca cat cag gtg gac tgt ttc ctc tct cgc ccc 809  
Lys Arg Asp Pro Cys Pro His Gln Val Asp Cys Phe Leu Ser Arg Pro  
190 195 200

acg gag aaa acc atc ttc atc atc ttc atg ctg gtg gtg tcc ttg gtg 857  
Thr Glu Lys Thr Ile Phe Ile Ile Phe Met Leu Val Val Ser Leu Val  
205 210 215

tcc ctg gcc ttg aat atc att gaa ctc ttc tat gtt ttc ttc aag ggc 905  
Ser Leu Ala Leu Asn Ile Ile Glu Leu Phe Tyr Val Phe Phe Lys Gly  
220 225 230 235

gtt aag gat cgg gtt aag gga aag agc gac cct tac cat gcg acc agt 953  
Val Lys Asp Arg Val Lys Gly Lys Ser Asp Pro Tyr His Ala Thr Ser  
240 245 250

ggt gcg ctg agc cct gcc aaa gac tgt ggg tct caa aaa tat gct tat 1001  
Gly Ala Leu Ser Pro Ala Lys Asp Cys Gly Ser Gln Lys Tyr Ala Tyr

209



ttaacatttt ttttttgagc taaagtcagg gaatcaagcc atgcttaata ttttaacaatc 2166  
 acttatatgt gtgtcgaaga gtttggtttg tttgtcatgt attggtacaa gcagatacag 2226  
 tataaaactca caaacacaga tttgaaaata atgcacatat ggtgttcaaa tttgaacctt 2286  
 tctcatggat ttttgtggtg tgggccaata tgggtgtttac attatataat tcctgctgtg 2346  
 gcaagtaaag cacacttttt ttttctccta aaatgttttt ccctgtgtat cctattatgg 2406  
 atactggttt tgtaattat gattctttat tttctctcct ttttttagga tatagcagta 2466  
 atgctattac tgaaatgaat ttcctttttc tgaaatgtaa tcattgatgc ttgaatgata 2526  
 gaattttagt actgtaaaca ggcttttagtc attaatgtga gagacttaga aaaaaatgct 2586  
 tagagtggac tattaaatgt gcctaaatga attttgcagt aactgggtatt cttgggtttt 2646  
 cctacttaat acacagtaat tcagaacttg tattctatta tgagttagc agtcttttgg 2706  
 agtgaccagc aactttgatg tttgcactaa gattttattt ggaatgcaag agaggttgaa 2766  
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 tgacactttt cttcttgcac gcatgtcagc tacataaaca gttttgtaca atgaaaatta 2946  
 ctaatttgtt tgacattcca tgttaaacta cggtcatgtt cagcttcatt gcatgtaatg 3006  
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<210> 117  
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 <213> Homo sapiens

<400> 117  
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 Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr Gly Asp Pro Gln  
 35 40 45  
 Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met Asp Pro Glu Ser  
 50 55 60  
 Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys Glu Lys Val Ser  
 65 70 75 80

Thr Gln Asn Leu Leu Leu Leu Thr Asp Asn Glu Ala Trp Asn Gly  
85 90 95

Phe Val Ala Ala Ala Glu Leu Pro Arg Asn Glu Ala Asp Glu Leu Arg  
100 105 110

Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met Lys Asp Lys Asn  
115 120 125

Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe Leu Lys Glu Phe  
130 135 140

Pro Arg Leu Lys Ser Lys Leu Glu Asp Asn Ile Arg Arg Leu Arg Ala  
145 150 155 160

Leu Ala Asp Gly Val Gln Lys Val His Lys Gly Thr Thr Ile Ala Asn  
165 170 175

Val Val Ser Gly Ser Leu Ser Ile Ser Ser Gly Ile Leu Thr Leu Val  
180 185 190

Gly Met Gly Leu Ala Pro Phe Thr Glu Gly Gly Ser Leu Val Leu Leu  
195 200 205

Glu Pro Gly Met Glu Leu Gly Ile Thr Ala Ala Leu Thr Gly Ile Thr  
210 215 220

Ser Ser Thr Ile Asp Tyr Gly Lys Lys Trp Trp Thr Gln Ala Gln Ala  
225 230 235 240

His Asp Leu Val Ile Lys Ser Leu Asp Lys Leu Lys Glu Val Lys Glu  
245 250 255

Phe Leu Gly Glu Asn Ile Ser Asn Phe Leu Ser Leu Ala Gly Asn Thr  
260 265 270

Tyr Gln Leu Thr Arg Gly Ile Gly Lys Asp Ile Arg Ala Leu Arg Arg  
275 280 285

Ala Arg Ala Asn Leu Gln Ser Val Pro His Ala Ser Ala Ser Arg Pro  
290 295 300

Arg Val Thr Glu Pro Ile Ser Ala Glu Ser Gly Glu Gln Val Glu Arg  
305 310 315 320

Val Asn Glu Pro Ser Ile Leu Glu Met Ser Arg Gly Val Lys Leu Thr  
325 330 335

Asp Val Ala Pro Val Ser Phe Phe Leu Val Leu Asp Val Val Tyr Leu  
340 345 350

Val Tyr Glu Ser Lys His Leu His Glu Gly Ala Lys Ser Glu Thr Ala  
355 360 365

Glu Glu Leu Lys Lys Val Ala Gln Glu Leu Glu Glu Lys Leu Asn Ile  
370 375 380

Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln Glu Leu  
385 390 395

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Met Glu Gly Ala Ala Leu Leu Arg Val Ser Val Leu  
1 5 10  
tgc atc tgg atg agt gca ctt ttc ctt ggt gtg gga gtg agg gca gag 159  
Cys Ile Trp Met Ser Ala Leu Phe Leu Gly Val Gly Val Arg Ala Glu  
15 20 25  
gaa gct gga gcg agg gtg caa caa aac gtt cca agt ggg aca gat act 207  
Glu Ala Gly Ala Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr  
30 35 40  
gga gat cct caa agt aag ccc ctc ggt gac tgg gct gct ggc acc atg 255  
Gly Asp Pro Gln Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met  
45 50 55 60  
gac cca gag agc agt atc ttt att gag gat gcc att aag tat ttc aag 303  
Asp Pro Glu Ser Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys  
65 70 75  
gaa aaa gtg agc aca cag aat ctg cta ctc ctg ctg act gat aat gag 351  
Glu Lys Val Ser Thr Gln Asn Leu Leu Leu Leu Thr Asp Asn Glu  
80 85 90  
gcc tgg aac gga ttc gtg gct gct gct gaa ctg ccc agg aat gag gca 399  
Ala Trp Asn Gly Phe Val Ala Ala Ala Glu Leu Pro Arg Asn Glu Ala  
95 100 105  
gat gag ctc cgt aaa gct ctg gac aac ctt gca aga caa atg atc atg 447  
Asp Glu Leu Arg Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met  
110 115 120  
aaa gac aaa aac tgg cac gat aaa ggc cag cag tac aga aac tgg ttt 495  
Lys Asp Lys Asn Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe  
125 130 135 140  
ctg aaa gag ttt cct cgg ttg aaa agt aag ctt gag gat aac ata aga 543  
Leu Lys Glu Phe Pro Arg Leu Lys Ser Lys Leu Glu Asp Asn Ile Arg  
145 150 155  
agg ctc cgt gcc ctt gca gat ggg gtt cag aag gtc cac aaa ggc acc 591



Arg	Leu	Arg	Ala	Leu	Ala	Asp	Gly	Val	Gln	Lys	Val	His	Lys	Gly	Thr		
			160					165					170				
acc	atc	gcc	aat	gtg	gtg	tct	ggc	tct	ctc	agc	att	tcc	tct	ggc	atc	639	
Thr	Ile	Ala	Asn	Val	Val	Ser	Gly	Ser	Leu	Ser	Ile	Ser	Ser	Gly	Ile		
		175					180				185						
ctg	acc	ctc	gtc	ggc	atg	ggg	ctg	gca	ccc	ttc	aca	gag	gga	ggc	agc	687	
Leu	Thr	Leu	Val	Gly	Met	Gly	Leu	Ala	Pro	Phe	Thr	Glu	Gly	Gly	Ser		
	190					195					200						
ctt	gta	ctc	ttg	gaa	cct	ggg	atg	gag	ttg	gga	atc	aca	gca	gct	ttg	735	
Leu	Val	Leu	Leu	Glu	Pro	Gly	Met	Glu	Leu	Gly	Ile	Thr	Ala	Ala	Leu		
205					210					215					220		
acc	ggg	att	acc	agc	agt	acc	ata	gac	tac	gga	aag	aag	tgg	tgg	aca	783	
Thr	Gly	Ile	Thr	Ser	Ser	Thr	Ile	Asp	Tyr	Gly	Lys	Lys	Trp	Trp	Thr		
			225					230						235			
caa	gcc	caa	gcc	cac	gac	ctg	gtc	atc	aaa	agc	ctt	gac	aaa	ttg	aag	831	
Gln	Ala	Gln	Ala	His	Asp	Leu	Val	Ile	Lys	Ser	Leu	Asp	Lys	Leu	Lys		
			240					245					250				
gag	gtg	aag	gag	ttt	ttg	ggg	gag	aac	ata	tcc	aac	ttt	ctt	tcc	tta	879	
Glu	Val	Lys	Glu	Phe	Leu	Gly	Glu	Asn	Ile	Ser	Asn	Phe	Leu	Ser	Leu		
	255					260						265					
gct	ggc	aat	act	tac	caa	ctc	aca	cga	ggc	att	ggg	aag	gac	atc	cgt	927	
Ala	Gly	Asn	Thr	Tyr	Gln	Leu	Thr	Arg	Gly	Ile	Gly	Lys	Asp	Ile	Arg		
	270				275						280						
gcc	ctc	aga	cga	gcc	aga	gcc	aat	ctt	cag	tca	gta	ccg	cat	gcc	tca	975	
Ala	Leu	Arg	Arg	Ala	Arg	Ala	Asn	Leu	Gln	Ser	Val	Pro	His	Ala	Ser		
285					290					295					300		
gcc	tca	cgc	ccc	cgg	gtc	act	gag	cca	atc	tca	gct	gaa	agc	ggg	gaa	1023	
Ala	Ser	Arg	Pro	Arg	Val	Thr	Glu	Pro	Ile	Ser	Ala	Glu	Ser	Gly	Glu		
			305						310					315			
cag	gtg	gag	aga	gtt	aat	gaa	ccc	agc	atc	ctg	gaa	atg	agc	aga	gga	1071	
Gln	Val	Glu	Arg	Val	Asn	Glu	Pro	Ser	Ile	Leu	Glu	Met	Ser	Arg	Gly		
			320					325					330				
gtc	aag	ctc	acg	gat	gtg	gcc	cct	gta	agc	ttc	ttt	ctt	gtg	ctg	gat	1119	
Val	Lys	Leu	Thr	Asp	Val	Ala	Pro	Val	Ser	Phe	Phe	Leu	Val	Leu	Asp		
		335					340					345					
gta	gtc	tac	ctc	gtg	tac	gaa	tca	aag	cac	tta	cat	gag	ggg	gca	aag	1167	
Val	Val	Tyr	Leu	Val	Tyr	Glu	Ser	Lys	His	Leu	His	Glu	Gly	Ala	Lys		
	350					355					360						
tca	gag	aca	gct	gag	gag	ctg	aag	aag	gtg	gct	cag	gag	ctg	gag	gag	1215	
Ser	Glu	Thr	Ala	Glu	Glu	Leu	Lys	Lys	Val	Ala	Gln	Glu	Leu	Glu	Glu		
365					370					375					380		
aag	cta	aac	att	ctc	aac	aat	aat	tat	aag	att	ctg	cag	gcg	gac	caa	1263	
Lys	Leu	Asn	Ile	Leu	Asn	Asn	Asn	Tyr	Lys	Ile	Leu	Gln	Ala	Asp	Gln		

385

390

395

gaa ctg tgaccacagg gcagggcagc caccaggaga gatatgcctg gcagggggcca 1319  
 Glu Leu

ggacaaaatg caaacttttt ttttttctga gacagagtct tgctctgtcg ccaagttgca 1379

gtgagccgag atatcgccac tgcaactccag cctgggtgac agagcgagac tccatctcaa 1439

aaaaaaaaa aaaaagaata tattgacgga agaatagaga ggaggcttga aggaaccagc 1499

aatgagaagg ccaggaaaag aaagagctga aaatggagaa agcccaagag ttagaacagt 1559

tggatacagg agaagaaaca gcggctccac tacagâccca gccccagggt caatgtcctc 1619

cgaagaatga agtctttccc tggatgatgt cccctgccct gtctttccag catccactct 1679

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acactgaagg gcaggtggtg agccatggcc atggtcccca gctgaggagc aggtgtcctt 1859

gagaacccaa acttcccaga gagtatgtga gaaccaacca atgaaaacag tcccatcgct 1919

cttaccgggt aagtaaacag tcagaaaatt agcatgaaag cagttagca ttggggaggaa 1979

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actcacctac tcatac 2054

<210> 119  
 <211> 398  
 <212> PRT  
 <213> Homo sapiens

<400> 119  
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Ser Ala Leu Phe Leu Gly Val Arg Val Arg Ala Glu Glu Ala Gly Ala  
           20                    25                    30

Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr Gly Asp Pro Gln  
           35                    40                    45

Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met Asp Pro Glu Ser  
           50                    55                    60

Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys Glu Lys Val Ser  
           65                    70                    75                    80

Thr Gln Asn Leu Leu Leu Leu Thr Asp Asn Glu Ala Trp Asn Gly  
                     85                    90                    95

Phe Val Ala Ala Ala Glu Leu Pro Arg Asn Glu Ala Asp Glu Leu Arg

100	105	110
Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met Lys Asp Lys Asn		
115	120	125
Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe Leu Lys Glu Phe		
130	135	140
Pro Arg Leu Lys Ser Lys Leu Glu Asp Asn Ile Arg Arg Leu Arg Ala		
145	150	155
Leu Ala Asp Gly Val Gln Lys Val His Lys Gly Thr Thr Ile Ala Asn		
165	170	175
Val Val Ser Gly Ser Leu Ser Ile Ser Ser Gly Ile Leu Thr Leu Val		
180	185	190
Gly Met Gly Leu Ala Pro Phe Thr Glu Gly Gly Ser Leu Val Leu Leu		
195	200	205
Glu Pro Gly Met Glu Leu Gly Ile Thr Ala Ala Leu Thr Gly Ile Thr		
210	215	220
Ser Ser Thr Ile Asp Tyr Gly Lys Lys Trp Trp Thr Gln Ala Gln Ala		
225	230	235
His Asp Leu Val Ile Lys Ser Leu Asp Lys Leu Lys Glu Val Lys Glu		
245	250	255
Phe Leu Gly Glu Asn Ile Ser Asn Phe Leu Ser Leu Ala Gly Asn Thr		
260	265	270
Tyr Gln Leu Thr Arg Gly Ile Gly Lys Asp Ile Arg Ala Leu Arg Arg		
275	280	285
Ala Arg Ala Asn Leu Gln Ser Val Pro His Ala Ser Ala Ser Arg Pro		
290	295	300
Arg Val Thr Glu Pro Ile Ser Ala Glu Ser Gly Glu Gln Val Glu Arg		
305	310	315
Val Asn Glu Pro Ser Ile Leu Glu Met Ser Arg Gly Val Lys Leu Thr		
325	330	335
Asp Val Ala Pro Val Ser Phe Phe Leu Val Leu Asp Val Val Tyr Leu		
340	345	350
Val Tyr Glu Ser Lys His Leu His Glu Gly Ala Lys Ser Glu Thr Ala		
355	360	365
Glu Glu Leu Lys Lys Val Ala Gln Glu Leu Glu Glu Lys Leu Asn Ile		
370	375	380
Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln Glu Leu		
385	390	395



Thr Ile Ala Asn Val Val Ser Gly Ser Leu Ser Ile Ser Ser Gly Ile  
 175 180 185

ctg acc ctc gtc ggc atg ggt ctg gca ccc ttc aca gag gga ggc agc 687  
 Leu Thr Leu Val Gly Met Gly Leu Ala Pro Phe Thr Glu Gly Gly Ser  
 190 195 200

ctt gta ctc ttg gaa cct ggg atg gag ttg gga atc aca gca gct ttg 735  
 Leu Val Leu Leu Glu Pro Gly Met Glu Leu Gly Ile Thr Ala Ala Leu  
 205 210 215 220

acc ggg att acc agc agt acc ata gac tac gga aag aag tgg tgg aca 783  
 Thr Gly Ile Thr Ser Ser Thr Ile Asp Tyr Gly Lys Lys Trp Trp Thr  
 225 230 235

caa gcc caa gcc cac gac ctg gtc atc aaa agc ctt gac aaa ttg aag 831  
 Gln Ala Gln Ala His Asp Leu Val Ile Lys Ser Leu Asp Lys Leu Lys  
 240 245 250

gag gtg aag gag ttt ttg ggt gag aac ata tcc aac ttt ctt tcc tta 879  
 Glu Val Lys Glu Phe Leu Gly Glu Asn Ile Ser Asn Phe Leu Ser Leu  
 255 260 265

gct ggc aat act tac caa ctc aca cga ggc att ggg aag gac atc cgt 927  
 Ala Gly Asn Thr Tyr Gln Leu Thr Arg Gly Ile Gly Lys Asp Ile Arg  
 270 275 280

gcc ctc aga cga gcc aga gcc aat ctt cag tca gta ccg cat gcc tca 975  
 Ala Leu Arg Arg Ala Arg Ala Asn Leu Gln Ser Val Pro His Ala Ser  
 285 290 295 300

gcc tca cgc ccc cgg gtc act gag cca atc tca gct gaa agc ggt gaa 1023  
 Ala Ser Arg Pro Arg Val Thr Glu Pro Ile Ser Ala Glu Ser Gly Glu  
 305 310 315

cag gtg gag aga gtt aat gaa ccc agc atc ctg gaa atg agc aga gga 1071  
 Gln Val Glu Arg Val Asn Glu Pro Ser Ile Leu Glu Met Ser Arg Gly  
 320 325 330

gtc aag ctc acg gat gtg gcc cct gta agc ttc ttt ctt gtg ctg gat 1119  
 Val Lys Leu Thr Asp Val Ala Pro Val Ser Phe Phe Leu Val Leu Asp  
 335 340 345

gta gtc tac ctc gtg tac gaa tca aag cac tta cat gag ggg gca aag 1167  
 Val Val Tyr Leu Val Tyr Glu Ser Lys His Leu His Glu Gly Ala Lys  
 350 355 360

tca gag aca gct gag gag ctg aag aag gtg gct cag gag ctg gag gag 1215  
 Ser Glu Thr Ala Glu Glu Leu Lys Lys Val Ala Gln Glu Leu Glu Glu  
 365 370 375 380

aag cta aac att ctc aac aat aat tat aag att ctg cag gcg gac caa 1263  
 Lys Leu Asn Ile Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln  
 385 390 395

gaa ctg tgaccacagg gcagggcagc caccaggaga gatatgcctg gcaggggcca 1319  
 Glu Leu

ggacaaaatg caaacttttt ttttttctga gacagagtct tgctctgtcg ccaagttgca 1379  
 gtgagccgag atatcgccac tgcactccag cctgggtgac agagcgagac tccatctcaa 1439  
 aaaaaaaaaa aaaaagaata tattgacgga agaatagaga ggaggcttga aggaaccagc 1499  
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 aactgaagg gcagggtgtg agccatggcc atggtcccca gctgaggagc aggtgtcctc 1859  
 gagaacccaa acttcccaga gagtatgtga gaaccaacca atgaaaacag tcccatcgct 1919  
 cttaccgggt aagtaaacag tcagaaaatt agcatgaaag cagtttagca ttgggaggaa 1979  
 gctcagatct cttagagctgt cttgtccccg ccaggattg acctgtgtaa gtcccaataa 2039  
 actcacctac tcatac 2054

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 <212> PRT  
 <213> Homo sapiens

<400> 121  
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 Asp Gly Lys Lys Phe Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys  
 35 40 45  
 Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val  
 50 55 60  
 Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp  
 65 70 75 80  
 Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala  
 85 90 95  
 Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu  
 100 105

<210> 122



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 gcctttgcct ccaccattcc caccaccct ccccttaaac cctctgcctt tgaaagtaga 1052  
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 gaagccttct ttgtggcctt tttttttttt tcatcctgtg gtttttctaa tggactttca 1172  
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 tcagccctt ctcaccctt tgetgtctg tgtagtatt tggtagaaa tegtgtctgc 1472  
 acccttcccc cagcaccatt tatgagtctc aagttttatt attgcaataa aagtgtttta 1532  
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<210> 123  
 <211> 679  
 <212> PRT  
 <213> Homo sapiens

<400> 123  
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 Phe Val Leu Ala Phe Ser Val Gly Ala Asn Asp Val Ala Asn Ser Phe  
 35 40 45  
 Gly Thr Ala Val Gly Ser Gly Val Val Thr Leu Lys Gln Ala Cys Ile  
 50 55 60  
 Leu Ala Ser Ile Phe Glu Thr Val Gly Ser Val Leu Leu Gly Ala Lys  
 65 70 75 80  
 Val Ser Glu Thr Ile Arg Lys Gly Leu Ile Asp Val Glu Met Tyr Asn  
 85 90 95  
 Ser Thr Gln Gly Leu Leu Met Ala Gly Ser Val Ser Ala Met Phe Gly  
 100 105 110  
 Ser Ala Val Trp Gln Leu Val Ala Ser Phe Leu Lys Leu Pro Ile Ser  
 115 120 125  
 Gly Thr His Cys Ile Val Gly Ala Thr Ile Gly Phe Ser Leu Val Ala  
 130 135 140



Lys Gly Gln Glu Gly Val Lys Trp Ser Glu Leu Ile Lys Ile Val Met  
 145 150 155 160  
 Ser Trp Phe Val Ser Pro Leu Leu Ser Gly Ile Met Ser Gly Ile Leu  
 165 170 175  
 Phe Phe Leu Val Arg Ala Phe Ile Leu His Lys Ala Asp Pro Val Pro  
 180 185 190  
 Asn Gly Leu Arg Ala Leu Pro Val Phe Tyr Ala Cys Thr Val Gly Ile  
 195 200 205  
 Asn Leu Phe Ser Ile Met Tyr Thr Gly Ala Pro Leu Leu Gly Phe Asp  
 210 215 220  
 Lys Leu Pro Leu Trp Gly Thr Ile Leu Ile Ser Val Gly Cys Ala Val  
 225 230 235 240  
 Phe Cys Ala Leu Ile Val Trp Phe Phe Val Cys Pro Arg Met Lys Arg  
 245 250 255  
 Lys Ile Glu Arg Glu Ile Lys Cys Ser Pro Ser Glu Ser Pro Leu Met  
 260 265 270  
 Glu Lys Lys Asn Ser Leu Lys Glu Asp His Glu Glu Thr Lys Leu Ser  
 275 280 285  
 Val Gly Asp Ile Glu Asn Lys His Pro Val Ser Glu Val Gly Pro Ala  
 290 295 300  
 Thr Val Pro Leu Gln Ala Val Val Glu Glu Arg Thr Val Ser Phe Lys  
 305 310 315 320  
 Leu Gly Asp Leu Glu Glu Ala Pro Glu Arg Glu Arg Leu Pro Ser Val  
 325 330 335  
 Asp Leu Lys Glu Glu Thr Ser Ile Asp Ser Thr Val Asn Gly Ala Val  
 340 345 350  
 Gln Leu Pro Asn Gly Asn Leu Val Gln Phe Ser Gln Ala Val Ser Asn  
 355 360 365  
 Gln Ile Asn Ser Ser Gly His Tyr Gln Tyr His Thr Val His Lys Asp  
 370 375 380  
 Ser Gly Leu Tyr Lys Glu Leu Leu His Lys Leu His Leu Ala Lys Val  
 385 390 395 400  
 Gly Asp Cys Met Gly Asp Ser Gly Asp Lys Pro Leu Arg Arg Asn Asn  
 405 410 415  
 Ser Tyr Thr Ser Tyr Thr Met Ala Ile Cys Gly Met Pro Leu Asp Ser  
 420 425 430  
 Phe Arg Ala Lys Glu Gly Glu Gln Lys Gly Glu Glu Met Glu Lys Leu  
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Thr Trp Pro Asn Ala Asp Ser Lys Lys Arg Ile Arg Met Asp Ser Tyr  
 450 455 460  
 Thr Ser Tyr Cys Asn Ala Val Ser Asp Leu His Ser Ala Ser Glu Ile  
 465 470 475 480  
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 485 490 495  
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 545 550 555 560  
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 580 585 590  
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 Cys Lys Val Gly Ser Val Val Ser Val Gly Trp Leu Arg Ser Lys Lys  
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 <212> DNA  
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<220>  
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 <400> 124

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Met Ala Thr Leu Ile Thr Ser Thr Thr Ala Ala	
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acc gcc gct tct ggt cct ttg gtg gac tac cta tgg atg ctc atc ctg	161
Thr Ala Ala Ser Gly Pro Leu Val Asp Tyr Leu Trp Met Leu Ile Leu	
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Gly Phe Ile Ile Ala Phe Val Leu Ala Phe Ser Val Gly Ala Asn Asp	
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gta gca aat tct ttt ggt aca gct gtg ggc tca ggt gta gtg acc ctg	257
Val Ala Asn Ser Phe Gly Thr Ala Val Gly Ser Gly Val Val Thr Leu	
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Lys Gln Ala Cys Ile Leu Ala Ser Ile Phe Glu Thr Val Gly Ser Val	
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Leu Leu Gly Ala Lys Val Ser Glu Thr Ile Arg Lys Gly Leu Ile Asp	
80 85 90	
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Val Glu Met Tyr Asn Ser Thr Gln Gly Leu Leu Met Ala Gly Ser Val	
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Ser Ala Met Phe Gly Ser Ala Val Trp Gln Leu Val Ala Ser Phe Leu	
110 115 120	
aag ctc cct att tct gga acc cat tgt att gtt ggt gca act att ggt	497
Lys Leu Pro Ile Ser Gly Thr His Cys Ile Val Gly Ala Thr Ile Gly	
125 130 135	
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Phe Ser Leu Val Ala Lys Gly Gln Glu Gly Val Lys Trp Ser Glu Leu	
140 145 150 155	
ata aaa att gtg atg tct tgg ttc gtg tcc cca ctg ctt tct gga att	593
Ile Lys Ile Val Met Ser Trp Phe Val Ser Pro Leu Leu Ser Gly Ile	
160 165 170	
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Met Ser Gly Ile Leu Phe Phe Leu Val Arg Ala Phe Ile Leu His Lys	
175 180 185	
gca gat cca gtt cct aat ggt ttg cga gct ttg cca gtt ttc tat gcc	689
Ala Asp Pro Val Pro Asn Gly Leu Arg Ala Leu Pro Val Phe Tyr Ala	
190 195 200	
tgc aca gtt gga ata aac ctc ttt tcc atc atg tat act gga gca ccg	737
Cys Thr Val Gly Ile Asn Leu Phe Ser Ile Met Tyr Thr Gly Ala Pro	
205 210 215	



gaa atg gag aag ctg aca tgg cct aat gca gac tcc aag aag cga att	1457
Glu Met Glu Lys Leu Thr Trp Pro Asn Ala Asp Ser Lys Lys Arg Ile	
445 450 455	
cga atg gac agt tac acc agt tac tgc aat gct gtg tct gac ctt cac	1505
Arg Met Asp Ser Tyr Thr Ser Tyr Cys Asn Ala Val Ser Asp Leu His	
460 465 470 475	
tca gca tct gag ata gac atg agt gtc aag gca gag atg ggt cta ggt	1553
Ser Ala Ser Glu Ile Asp Met Ser Val Lys Ala Glu Met Gly Leu Gly	
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gac aga aaa gga agt aat ggc tct cta gaa gaa tgg tat gac cag gat	1601
Asp Arg Lys Gly Ser Asn Gly Ser Leu Glu Glu Trp Tyr Asp Gln Asp	
495 500 505	
aag cct gaa gtc tct ctc ctc ttc cag ttc ctg cag atc ctt aca gcc	1649
Lys Pro Glu Val Ser Leu Leu Phe Gln Phe Leu Gln Ile Leu Thr Ala	
510 515 520	
tgc ttt ggg tca ttc gcc cat ggt ggc aat gac gta agc aat gcc att	1697
Cys Phe Gly Ser Phe Ala His Gly Gly Asn Asp Val Ser Asn Ala Ile	
525 530 535	
ggg cct ctg gtt gct tta tat ttg gtt tat gac aca gga gat gtt tct	1745
Gly Pro Leu Val Ala Leu Tyr Leu Val Tyr Asp Thr Gly Asp Val Ser	
540 545 550 555	
tca aaa gtg gca aca cca ata tgg ctt cta ctc tat ggt ggt gtt ggt	1793
Ser Lys Val Ala Thr Pro Ile Trp Leu Leu Tyr Gly Gly Val Gly	
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atc tgt gtt ggt ctg tgg gtt tgg gga aga aga gtt atc cag acc atg	1841
Ile Cys Val Gly Leu Trp Val Trp Gly Arg Arg Val Ile Gln Thr Met	
575 580 585	
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Gly Lys Asp Leu Thr Pro Ile Thr Pro Ser Ser Gly Phe Ser Ile Glu	
590 595 600	
ctg gca tct gcc ctc act gtg gtg att gca tca aat att ggc ctt ccc	1937
Leu Ala Ser Ala Leu Thr Val Val Ile Ala Ser Asn Ile Gly Leu Pro	
605 610 615	
atc agt aca aca cat tgt aaa gtg ggc tct gtt gtg tct gtt ggc tgg	1985
Ile Ser Thr Thr His Cys Lys Val Gly Ser Val Val Ser Val Gly Trp	
620 625 630 635	
ctc cgg tcc aag aag gct gtt gac tgg cgt ctc ttt cgt aac att ttt	2033
Leu Arg Ser Lys Lys Ala Val Asp Trp Arg Leu Phe Arg Asn Ile Phe	
640 645 650	
atg gcc tgg ttt gtc aca gtc cct att tct gga gtt atc agt gct gcc	2081
Met Ala Trp Phe Val Thr Val Pro Ile Ser Gly Val Ile Ser Ala Ala	
655 660 665	
atc atg gca atc ttc aga tat gtc atc ctc aga atg tgaagctgtt	2127

Ile Met Ala Ile Phe Arg Tyr Val Ile Leu Arg Met  
670 675

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agtttttag 2916

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<211> 288  
<212> PRT  
<213> Homo sapiens

<400> 125

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			20					25					30		
Phe	Met	Arg	Asn	Phe	Gln	Lys	Gly	Gln	Val	Thr	Arg	Asp	Gly	Phe	Lys
		35					40					45			
Leu	Val	Met	Ala	Ser	Leu	Tyr	His	Ile	Tyr	Val	Ala	Leu	Glu	Glu	Glu
	50					55					60				
Ile	Glu	Arg	Asn	Lys	Glu	Ser	Pro	Val	Phe	Ala	Pro	Val	Tyr	Phe	Pro
65				70					75					80	
Glu	Glu	Leu	His	Arg	Lys	Ala	Ala	Leu	Glu	Gln	Asp	Leu	Ala	Phe	Trp
			85					90					95		
Tyr	Gly	Pro	Arg	Trp	Gln	Glu	Val	Ile	Pro	Tyr	Thr	Pro	Ala	Met	Gln

100	105	110
Arg Tyr Val Lys Arg Leu His Glu Val Gly Arg Thr Glu Pro Glu Leu 115 120 125		
Leu Val Ala His Ala Tyr Thr Arg Tyr Leu Gly Asp Leu Ser Gly Gly 130 135 140		
Gln Val Leu Lys Lys Ile Ala Gln Lys Ala Leu Asp Leu Pro Ser Ser 145 150 155 160		
Gly Glu Gly Leu Ala Phe Phe Thr Phe Pro Asn Ile Ala Ser Ala Thr 165 170 175		
Lys Phe Lys Gln Leu Tyr Arg Ser Arg Met Asn Ser Leu Glu Met Thr 180 185 190		
Pro Ala Val Arg Gln Arg Val Ile Glu Glu Ala Lys Thr Ala Phe Leu 195 200 205		
Leu Asn Ile Gln Leu Phe Glu Glu Leu Gln Glu Leu Leu Thr His Asp 210 215 220		
Thr Lys Asp Gln Ser Pro Ser Arg Ala Pro Gly Leu Arg Gln Arg Ala 225 230 235 240		
Ser Asn Lys Val Gln Asp Ser Ala Pro Val Glu Thr Pro Arg Gly Lys 245 250 255		
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 <212> DNA  
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 <222> (81)..(944)

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 Met Glu Arg Pro Gln Pro Asp Ser Met Pro Gln  
 1 5 10  
 gat ttg tca gag gcc ctg aag gag gcc acc aag gag gtg cac acc cag 161  
 Asp Leu Ser Glu Ala Leu Lys Glu Ala Thr Lys Glu Val His Thr Gln  
 15 20 25  
 gca gag aat gct gag ttc atg agg aac ttt cag aag ggc cag gtg acc 209

Ala	Glu	Asn	Ala	Glu	Phe	Met	Arg	Asn	Phe	Gln	Lys	Gly	Gln	Val	Thr		
		30						35					40				
cga	gac	ggc	ttc	aag	ctg	gtg	atg	gcc	tcc	ctg	tac	cac	atc	tat	gtg	257	
Arg	Asp	Gly	Phe	Lys	Leu	Val	Met	Ala	Ser	Leu	Tyr	His	Ile	Tyr	Val		
	45					50					55						
gcc	ctg	gag	gag	gag	att	gag	cgc	aac	aag	gag	agc	cca	gtc	ttc	gcc	305	
Ala	Leu	Glu	Glu	Glu	Ile	Glu	Arg	Asn	Lys	Glu	Ser	Pro	Val	Phe	Ala		
	60				65					70					75		
cct	gtc	tac	ttc	cca	gaa	gag	ctg	cac	cgc	aag	gct	gcc	ctg	gag	cag	353	
Pro	Val	Tyr	Phe	Pro	Glu	Glu	Leu	His	Arg	Lys	Ala	Ala	Leu	Glu	Gln		
				80					85					90			
gac	ctg	gcc	ttc	tgg	tac	ggg	ccc	cgc	tgg	cag	gag	gtc	atc	ccc	tac	401	
Asp	Leu	Ala	Phe	Trp	Tyr	Gly	Pro	Arg	Trp	Gln	Glu	Val	Ile	Pro	Tyr		
			95					100					105				
aca	cca	gcc	atg	cag	cgc	tat	gtg	aag	cgg	ctc	cac	gag	gtg	ggg	cgc	449	
Thr	Pro	Ala	Met	Gln	Arg	Tyr	Val	Lys	Arg	Leu	His	Glu	Val	Gly	Arg		
		110					115					120					
aca	gag	ccc	gag	ctg	ctg	gtg	gcc	cac	gcc	tac	acc	cgc	tac	ctg	ggc	497	
Thr	Glu	Pro	Glu	Leu	Leu	Val	Ala	His	Ala	Tyr	Thr	Arg	Tyr	Leu	Gly		
	125					130					135						
gac	ctg	tct	ggg	ggc	cag	gtg	ctc	aaa	aag	att	gcc	cag	aaa	gcc	ctg	545	
Asp	Leu	Ser	Gly	Gly	Gln	Val	Leu	Lys	Lys	Ile	Ala	Gln	Lys	Ala	Leu		
	140				145					150					155		
gac	ctg	ccc	agc	tct	ggc	gag	ggc	ctg	gcc	ttc	ttc	acc	ttc	ccc	aac	593	
Asp	Leu	Pro	Ser	Ser	Gly	Glu	Gly	Leu	Ala	Phe	Phe	Thr	Phe	Pro	Asn		
				160					165					170			
att	gcc	agt	gcc	acc	aag	ttc	aag	cag	ctc	tac	cgc	tcc	cgc	atg	aac	641	
Ile	Ala	Ser	Ala	Thr	Lys	Phe	Lys	Gln	Leu	Tyr	Arg	Ser	Arg	Met	Asn		
			175					180					185				
tcc	ctg	gag	atg	act	ccc	gca	gtc	agg	cag	agg	gtg	ata	gaa	gag	gcc	689	
Ser	Leu	Glu	Met	Thr	Pro	Ala	Val	Arg	Gln	Arg	Val	Ile	Glu	Glu	Ala		
			190				195					200					
aag	act	gcg	ttc	ctg	ctc	aac	atc	cag	ctc	ttt	gag	gag	ttg	cag	gag	737	
Lys	Thr	Ala	Phe	Leu	Leu	Asn	Ile	Gln	Leu	Phe	Glu	Glu	Leu	Gln	Glu		
	205					210					215						
ctg	ctg	acc	cat	gac	acc	aag	gac	cag	agc	ccc	tca	cgg	gca	cca	ggg	785	
Leu	Leu	Thr	His	Asp	Thr	Lys	Asp	Gln	Ser	Pro	Ser	Arg	Ala	Pro	Gly		
	220				225					230				235			
ctt	cgc	cag	cgg	gcc	agc	aac	aaa	gtg	caa	gat	tct	gcc	ccc	gtg	gag	833	
Leu	Arg	Gln	Arg	Ala	Ser	Asn	Lys	Val	Gln	Asp	Ser	Ala	Pro	Val	Glu		
				240				245						250			
act	ccc	aga	ggg	aag	ccc	cca	ctc	aac	acc	cgc	tcc	cag	gct	cgg	ctt	881	
Thr	Pro	Arg	Gly	Lys	Pro	Pro	Leu	Asn	Thr	Arg	Ser	Gln	Ala	Pro	Leu		



255                      260                      265  
 ctc cga tgg gtc ctt aca ctc agc ttt ctg gtg gcg aca gtt gct gta . 929  
 Leu Arg Trp Val Leu Thr Leu Ser Phe Leu Val Ala Thr Val Ala Val  
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 ggg ctt tat gcc atg tgaatgcagg catgctggct cccagggcca tgaactttgt 984  
 Gly Leu Tyr Ala Met  
       285  
 ccggtggaag gccttctttc tagagaggga attctcttgg ctggcttcct taccgtgggc 1044  
 actgaaggct ttcagggcct ccagccctct cactgtgtcc ctctctctgg aaaggaggaa 1104  
 ggagcctatg gcctcttccc caacgaaaag cacatccagg caatggccta aacttcagag 1164  
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 tcaa atgcag tattttttgt gtgttctgtt gtttttatag cagggttggg gtggtttttg 1464  
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 <212> PRT  
 <213> Homo sapiens

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 Leu Asn Leu Gly Lys Asp Ser Asn Asn Leu Cys Leu His Phe Asn Pro  
           35                      40                      45  
 Arg Phe Asn Ala His Gly Asp Ala Asn Thr Ile Val Cys Asn Ser Lys  
           50                      55                      60  
 Asp Gly Gly Ala Trp Gly Thr Glu Gln Arg Glu Ala Val Phe Pro Phe  
           65                      70                      75                      80  
 Gln Pro Gly Ser Val Ala Glu Val Cys Ile Thr Phe Asp Gln Ala Asn  
           85                      90                      95  
 Leu Thr Val Lys Leu Pro Asp Gly Tyr Glu Phe Lys Phe Pro Asn Arg  
           100                      105                      110

Leu Asn Leu Glu Ala Ile Asn Tyr Met Ala Ala Asp Gly Asp Phe Lys  
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Ile Lys Cys Val Ala Phe Asp  
 130 135

<210> 128  
 <211> 507  
 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (50)..(454)

<400> 128  
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 Met Ala Cys  
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 Gly Leu Val Ala Ser Asn Leu Asn Leu Lys Pro Gly Glu Cys Leu Arg  
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gtg cga ggc gag gtg gct cct gac gct aag agc ttc gtg ctg aac ctg 154  
 Val Arg Gly Glu Val Ala Pro Asp Ala Lys Ser Phe Val Leu Asn Leu  
 20 25 30 35

ggc aaa gac agc aac aac ctg tgc ctg cac ttc aac cct cgc ttc aac 202  
 Gly Lys Asp Ser Asn Asn Leu Cys Leu His Phe Asn Pro Arg Phe Asn  
 40 45 50

gcc cac ggc gac gcc aac acc atc gtg tgc aac agc aag gac ggc ggc 250  
 Ala His Gly Asp Ala Asn Thr Ile Val Cys Asn Ser Lys Asp Gly Gly  
 55 60 65

gcc tgg ggg acc gag cag cgg gag gct gtc ttt ccc ttc cag cct gga 298  
 Ala Trp Gly Thr Glu Gln Arg Glu Ala Val Phe Pro Phe Gln Pro Gly  
 70 75 80

agt gtt gca gag gtg tgc atc acc ttc gac cag gcc aac ctg acc gtc 346  
 Ser Val Ala Glu Val Cys Ile Thr Phe Asp Gln Ala Asn Leu Thr Val  
 85 90 95

aag ctg cca gat gga tac gaa ttc aag ttc ccc aac cgc ctc aac ctg 394  
 Lys Leu Pro Asp Gly Tyr Glu Phe Lys Phe Pro Asn Arg Leu Asn Leu  
 100 105 110 115

gag gcc atc aac tac atg gca gct gac ggt gac ttc aag atc aaa tgt 442  
 Glu Ala Ile Asn Tyr Met Ala Ala Asp Gly Asp Phe Lys Ile Lys Cys  
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 Val Ala Phe Asp  
 135

ctctgctccc ctg

507

<210> 129  
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 <212> PRT  
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           20                  25                  30  
 Asn Phe Thr Phe Glu Phe Ser Gln Trp Ser Gln Leu Asp Val Cys Asp  
           35                  40                  45  
 Ile Pro Glu Ser Phe Gln Arg Ser Val Asp Gly Val Ser Glu Ser Lys  
           50                  55                  60  
 Leu Gln Ile Cys Val Glu Pro Thr Ser Gln Lys Leu Met Pro Gly Ser  
   65                  70                  75                  80  
 Thr Leu Val Leu Gln Cys Val Ala Val Gly Ser Pro Ile Pro His Tyr  
           85                  90                  95  
 Gln Trp Phe Lys Asn Glu Leu Pro Leu Thr His Glu Thr Lys Lys Leu  
           100                  105                  110  
 Tyr Met Val Pro Tyr Val Asp Leu Glu His Gln Gly Thr Tyr Trp Cys  
           115                  120                  125  
 His Val Tyr Asn Asp Arg Asp Ser Gln Asp Ser Lys Lys Val Glu Ile  
           130                  135                  140  
 Ile Ile Gly Arg Thr Asp Glu Ala Val Glu Cys Thr Glu Asp Glu Leu  
   145                  150                  155                  160  
 Asn Asn Leu Gly His Pro Asp Asn Lys Glu Gln Thr Thr Asp Gln Pro  
           165                  170                  175  
 Leu Ala Lys Asp Lys Val Ala Leu Leu Ile Gly Asn Met Asn Tyr Arg  
           180                  185                  190  
 Glu His Pro Lys Leu Lys Ala Pro Leu Val Asp Val Tyr Glu Leu Thr  
           195                  200                  205  
 Asn Leu Leu Arg Gln Leu Asp Phe Lys Val Val Ser Leu Leu Asp Leu  
   210                  215                  220  
 Thr Glu Tyr Glu Met Arg Asn Ala Val Asp Glu Phe Leu Leu Leu Leu  
   225                  230                  235                  240  
 Asp Lys Gly Val Tyr Gly Leu Leu Tyr Tyr Ala Gly His Gly Tyr Glu  
           245                  250                  255

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			260					265					270			
Arg	Ser	Glu	Asn	Cys	Leu	Cys	Val	Gln	Asn	Ile	Leu	Lys	Leu	Met	Gln	
		275					280					285				
Glu	Lys	Glu	Thr	Gly	Leu	Asn	Val	Phe	Leu	Leu	Asp	Met	Cys	Arg	Lys	
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Ile Ser Ser Phe Ala His His Ala Ser Cys His Phe Ser Arg Ser Asn  
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Met Asn Lys Glu Ile Pro Asn Gly Asn Thr Ser Glu  
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gat gtt tgc gac atc cca gag agc ttc cag aga agt gtt gat ggc gtc 253  
Asp Val Cys Asp Ile Pro Glu Ser Phe Gln Arg Ser Val Asp Gly Val  
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Ser Glu Ser Lys Leu Gln Ile Cys Val Glu Pro Thr Ser Gln Lys Leu  
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Tyr Gln Ser Ser Ala Ala Thr Ser Gly Gly Ala Gly His Tyr His Ser  
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Ser Asn Val Thr Pro Ala Asp Ser Cys His Cys Ser Arg Thr Pro Asp  
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Ala Phe Ile Ser Ser Phe Ala His His Ala Ser Cys His Phe Ser Arg  
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Cys Thr Val Thr Glu Leu Ser Asp Phe Leu Gln Ala Met Glu His Thr	
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Pro Glu Ser Lys Ala Val Leu Ala Gly Gln Phe Val Lys Leu Cys Cys	
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Asn Ile Val Phe Gly Tyr Ala Thr Cys Gln Gly Ala Glu Ala Phe Glu	

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atc cag cat tct gga ttg gca aat gga atc ttt atg aaa ttt tta aaa				1712
Ile Gln His Ser Gly Leu Ala Asn Gly Ile Phe Met Lys Phe Leu Lys	505	510	515	
gac aga tta tta gaa gat aag aaa atc act gtg tta ctg gat gaa gtt				1760
Asp Arg Leu Leu Glu Asp Lys Lys Ile Thr Val Leu Leu Asp Glu Val	520	525	530	
gca gaa gat atg ggt aag tgt cac ctt acc aaa ggc aaa cag gct cta				1808
Ala Glu Asp Met Gly Lys Cys His Leu Thr Lys Gly Lys Gln Ala Leu	535	540	545	
gag att cga agt agt tta tct gag aag aga gca ctt act gat cca ata				1856
Glu Ile Arg Ser Ser Leu Ser Glu Lys Arg Ala Leu Thr Asp Pro Ile	550	555	560	
cag gga aca gaa tat tct gct gaa tct ctt gtg cgg aat cta cag tgg				1904
Gln Gly Thr Glu Tyr Ser Ala Glu Ser Leu Val Arg Asn Leu Gln Trp	565	570	575	580
gcc aag gct cat gaa ctt cca gaa agt atg tgt ctt aag ttt gac tgt				1952
Ala Lys Ala His Glu Leu Pro Glu Ser Met Cys Leu Lys Phe Asp Cys	585	590	595	
ggt gtt cag att caa tta gga ttt gca gct gag ttt tcc aat gtc atg				2000
Gly Val Gln Ile Gln Leu Gly Phe Ala Ala Glu Phe Ser Asn Val Met	600	605	610	
atc atc tat aca agt ata gtt tac aaa cca ccg gag ata ata atg tgt				2048
Ile Ile Tyr Thr Ser Ile Val Tyr Lys Pro Pro Glu Ile Ile Met Cys	615	620	625	
gat gcc tac gtt act gat ttt cca ctt gat cta gat att gat cca aaa				2096
Asp Ala Tyr Val Thr Asp Phe Pro Leu Asp Leu Asp Ile Asp Pro Lys	630	635	640	
gat gca aat aaa ggc aca cct gaa gaa act ggc agc tac ttg gta tca				2144
Asp Ala Asn Lys Gly Thr Pro Glu Glu Thr Gly Ser Tyr Leu Val Ser	645	650	655	660
aag gat ctt ccc aag cat tgc ctc tat acc aga ctc agt tca ctg caa				2192
Lys Asp Leu Pro Lys His Cys Leu Tyr Thr Arg Leu Ser Ser Leu Gln	665	670	675	
aaa tta aag gaa cat cta gtc ttc aca gta tgt tta tca tat cag tac				2240
Lys Leu Lys Glu His Leu Val Phe Thr Val Cys Leu Ser Tyr Gln Tyr	680	685	690	
tca gga ttg gaa gat act gta gag gac aag cag gaa gtg aat gtt ggg				2288
Ser Gly Leu Glu Asp Thr Val Glu Asp Lys Gln Glu Val Asn Val Gly	695	700	705	
aaa cct ctc att gct aaa tta gac atg cat cga ggt ttg gga agg aag				2336
Lys Pro Leu Ile Ala Lys Leu Asp Met His Arg Gly Leu Gly Arg Lys	710	715	720	

act tgc ttt caa act tgt ctt atg tct aat ggt cct tac cag agt tct 2384  
 Thr Cys Phe Gln Thr Cys Leu Met Ser Asn Gly Pro Tyr Gln Ser Ser  
 725 730 735 740

gca gcc acc tca gga gga gca ggg cat tat cac tca ttg caa gac cca 2432  
 Ala Ala Thr Ser Gly Gly Ala Gly His Tyr His Ser Leu Gln Asp Pro  
 745 750 755

ttc cat ggt gtt tac cat tca cat cct ggt aat cca agt aat gtt aca 2480  
 Phe His Gly Val Tyr His Ser His Pro Gly Asn Pro Ser Asn Val Thr  
 760 765 770

cca gca gat agc tgt cat tgc agc cgg act cca gat gca ttt att tca 2528  
 Pro Ala Asp Ser Cys His Cys Ser Arg Thr Pro Asp Ala Phe Ile Ser  
 775 780 785

agt ttc gct cac cat gct tca tgt cat ttt agt aga agt aat gtg cca 2576  
 Ser Phe Ala His His Ala Ser Cys His Phe Ser Arg Ser Asn Val Pro  
 790 795 800

gta gag aca act gat gaa ata cca ttt agt ttc tct gac agg ctc aga 2624  
 Val Glu Thr Thr Asp Glu Ile Pro Phe Ser Phe Ser Asp Arg Leu Arg  
 805 810 815 820

att tct gaa aaa tgacctcctt gtttttgaaa gtttagcataa ttttagatgc 2676  
 Ile Ser Glu Lys

ctgtgaaata gtactgcact tacataaagt gagacattgt gaaaaggcaa atttgtatat 2736

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 35 40 45

Cys Glu Val Ser His Arg Arg Ala Phe His Gly Trp Asn Glu Phe Asp  
 50 55 60

Ile Ser Glu Asp Glu Pro Leu Trp Lys Lys Tyr Ile Ser Gln Phe Lys  
 65 70 75 80

Asn Pro Leu Ile Met Leu Leu Leu Ala Ser Ala Val Ile Ser Val Leu

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Val	Val	Thr	Val	Ala	Phe	Val	Gln	Glu	Tyr	Arg	Ser	Glu	Lys	Ser	Leu				
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Glu	Glu	Leu	Ser	Lys	Leu	Val	Pro	Pro	Glu	Cys	His	Cys	Val	Arg	Glu				
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Gly	Lys	Leu	Glu	His	Thr	Leu	Ala	Arg	Asp	Leu	Val	Pro	Gly	Asp	Thr				
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Val	Cys	Leu	Ser	Val	Gly	Asp	Arg	Val	Pro	Ala	Asp	Leu	Arg	Leu	Phe				
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Glu	Ala	Val	Asp	Leu	Ser	Ile	Asp	Glu	Ser	Ser	Leu	Thr	Gly	Glu	Thr				
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Thr	Pro	Cys	Ser	Lys	Val	Thr	Ala	Pro	Gln	Pro	Ala	Ala	Thr	Asn	Gly				
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Cys	Gly	Lys	Ala	Lys	Gly	Val	Val	Ile	Gly	Thr	Gly	Glu	Asn	Ser	Glu				
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Phe	Gly	Glu	Val	Phe	Lys	Met	Met	Gln	Ala	Glu	Glu	Ala	Pro	Lys	Thr				
			245					250					255						
Pro	Leu	Gln	Lys	Ser	Met	Asp	Leu	Leu	Gly	Lys	Gln	Leu	Ser	Phe	Tyr				
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Ser	Phe	Gly	Ile	Ile	Gly	Ile	Ile	Met	Leu	Val	Gly	Trp	Leu	Leu	Gly				
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Lys	Asp	Ile	Leu	Glu	Met	Phe	Thr	Ile	Ser	Val	Ser	Leu	Ala	Val	Ala				
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Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ile	Val	Val	Thr	Val	Thr	Leu	Ala	Leu				
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Ile	Val	Glu	Thr	Leu	Gly	Cys	Cys	Asn	Val	Ile	Cys	Ser	Asp	Lys	Thr				
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Gly	Thr	Leu	Thr	Lys	Asn	Glu	Met	Thr	Val	Thr	His	Ile	Phe	Thr	Ser				
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Asp	Gly	Leu	His	Ala	Glu	Val	Thr	Gly	Val	Gly	Tyr	Asn	Gln	Phe	Gly				
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Glu	Val	Ile	Val	Asp	Gly	Asp	Val	Val	His	Gly	Phe	Tyr	Asn	Pro	Ala				



385					390					395					400
Val	Ser	Arg	Ile	Val	Glu	Ala	Gly	Cys	Val	Cys	Asn	Asp	Ala	Val	Ile
				405					410					415	
Arg	Asn	Asn	Thr	Leu	Met	Gly	Lys	Pro	Thr	Glu	Gly	Ala	Leu	Ile	Ala
			420					425					430		
Leu	Ala	Met	Lys	Met	Gly	Leu	Asp	Gly	Leu	Gln	Gln	Asp	Tyr	Ile	Arg
		435					440					445			
Lys	Ala	Glu	Tyr	Pro	Phe	Ser	Ser	Glu	Gln	Lys	Trp	Met	Ala	Val	Lys
	450					455					460				
Cys	Val	His	Arg	Thr	Gln	Gln	Asp	Arg	Pro	Glu	Ile	Cys	Phe	Met	Lys
465					470					475					480
Gly	Ala	Tyr	Glu	Gln	Val	Ile	Lys	Tyr	Cys	Thr	Thr	Tyr	Gln	Ser	Lys
				485					490					495	
Gly	Gln	Thr	Leu	Thr	Leu	Thr	Gln	Gln	Gln	Arg	Asp	Val	Tyr	Gln	Gln
			500				505						510		
Glu	Lys	Ala	Arg	Met	Gly	Ser	Ala	Gly	Leu	Arg	Val	Leu	Ala	Leu	Ala
		515					520					525			
Ser	Gly	Pro	Glu	Leu	Gly	Gln	Leu	Thr	Phe	Leu	Gly	Leu	Val	Gly	Ile
	530					535					540				
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Ala	Ser	Gly	Val	Ser	Ile	Lys	Met	Ile	Thr	Gly	Asp	Ser	Gln	Glu	Thr
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Ala	Val	Ala	Ile	Ala	Ser	Arg	Leu	Gly	Leu	Tyr	Ser	Lys	Thr	Ser	Gln
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Ser	Val	Ser	Gly	Glu	Glu	Ile	Asp	Ala	Met	Asp	Val	Gln	Gln	Leu	Ser
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Gln	Ile	Val	Pro	Lys	Val	Ala	Val	Phe	Tyr	Arg	Ala	Ser	Pro	Arg	His
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Lys	Met	Lys	Ile	Ile	Lys	Ser	Leu	Gln	Lys	Asn	Gly	Ser	Val	Val	Ala
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Met	Thr	Gly	Asp	Gly	Val	Asn	Asp	Ala	Val	Ala	Leu	Lys	Ala	Ala	Asp
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Ile	Gly	Val	Ala	Met	Gly	Gln	Thr	Gly	Thr	Asp	Val	Cys	Lys	Glu	Ala
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Ala	Asp	Met	Ile	Leu	Val	Asp	Asp	Asp	Phe	Gln	Thr	Ile	Met	Ser	Ala
		675					680					685</			

690	695	700
Phe Gln Leu Ser Thr Ser Ile Ala Ala Leu Thr Leu Ile Ser Leu Ala		
705	710	715 720
Thr Leu Met Asn Phe Pro Asn Pro Leu Asn Ala Met Gln Ile Leu Trp		
	725	730 735
Ile Asn Ile Ile Met Asp Gly Pro Pro Ala Gln Ser Leu Gly Val Glu		
	740	745 750
Pro Val Asp Lys Asp Val Ile Arg Lys Pro Pro Arg Asn Trp Lys Asp		
	755	760 765
Ser Ile Leu Thr Lys Asn Leu Ile Leu Lys Ile Leu Val Ser Ser Ile		
	770	775 780
Ile Ile Val Cys Gly Thr Leu Phe Val Phe Trp Arg Glu Leu Arg Asp		
785	790	795 800
Asn Val Ile Thr Pro Arg Asp Thr Thr Met Thr Phe Thr Cys Phe Val		
	805	810 815
Phe Phe Asp Met Phe Asn Ala Leu Ser Ser Arg Ser Gln Thr Lys Ser		
	820	825 830
Val Phe Glu Ile Gly Leu Cys Ser Asn Arg Met Phe Cys Tyr Ala Val		
	835	840 845
Leu Gly Ser Ile Met Gly Gln Leu Leu Val Ile Tyr Phe Pro Pro Leu		
850	855	860
Gln Lys Val Phe Gln Thr Glu Ser Leu Ser Ile Leu Asp Leu Leu Phe		
865	870	875 880
Leu Leu Gly Leu Thr Ser Ser Val Cys Ile Val Ala Glu Ile Ile Lys		
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Ser Ser Ser Phe Leu Glu Val		
915		

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 gagcaggctc ccgcctcgca ccgtgcccc gcgagcagct cctcttctcc cgaggcgccg 180  
 ggggcgcccc cgcgagcccc gcggctgaga ccccgacagcc tggaggaggg ctgtccgggg 240  
 ctttgatgc tgctgctagg ggtggtggga gcagccgtgg gacgcgtggc cgggagcggg 300  
 ggtgacagcc tgggattccg ggggcttctc ttccttgctc tctcctctc ctctctatcc 360  
 ccagtgtggc cgtggctgac actaaagact ttgtagccat caacccgagt gcagtttoga 420  
 tggaaa atg aag gtt gca cgt ttt caa aaa ata cct aat ggt gaa aat 468  
 Met Lys Val Ala Arg Phe Gln Lys Ile Pro Asn Gly Glu Asn  
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 gag aca atg att cct gta ttg aca tca aaa aaa gca agt gaa tta cca 516  
 Glu Thr Met Ile Pro Val Leu Thr Ser Lys Lys Ala Ser Glu Leu Pro  
 15 20 25 30  
 gtc agt gaa gtt gca agc att ctg caa gct gat ctt cag aat ggt cta 564  
 Val Ser Glu Val Ala Ser Ile Leu Gln Ala Asp Leu Gln Asn Gly Leu  
 35 40 45  
 aac aaa tgt gaa gtt agt cat agg cga gcc ttt cat ggc tgg aat gag 612  
 Asn Lys Cys Glu Val Ser His Arg Arg Ala Phe His Gly Trp Asn Glu  
 50 55 60  
 ttt gat att agt gaa gat gag cca ctg tgg aag aag tat att tct cag 660  
 Phe Asp Ile Ser Glu Asp Glu Pro Leu Trp Lys Lys Tyr Ile Ser Gln  
 65 70 75  
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 Phe Lys Asn Pro Leu Ile Met Leu Leu Leu Ala Ser Ala Val Ile Ser  
 80 85 90  
 gtt tta atg cat cag ttt gat gat gcc gtc agt atc act gtg gca ata 756  
 Val Leu Met His Gln Phe Asp Asp Ala Val Ser Ile Thr Val Ala Ile  
 95 100 105 110  
 ctt atc gtt gtt aca gtt gcc ttt gtt cag gaa tat cgt tca gaa aaa 804  
 Leu Ile Val Val Thr Val Ala Phe Val Gln Glu Tyr Arg Ser Glu Lys  
 115 120 125  
 tct ctt gaa gaa ttg agt aaa ctt gtg cca cca gaa tgc cat tgt gtg 852  
 Ser Leu Glu Glu Leu Ser Lys Leu Val Pro Pro Glu Cys His Cys Val  
 130 135 140  
 cgt gaa gga aaa ttg gag cat aca ctt gcc cga gac ttg gtt cca ggt 900  
 Arg Glu Gly Lys Leu Glu His Thr Leu Ala Arg Asp Leu Val Pro Gly  
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 gat aca gtt tgc ctt tct gtt ggg gat aga gtt cct gct gac tta cgc 948  
 Asp Thr Val Cys Leu Ser Val Gly Asp Arg Val Pro Ala Asp Leu Arg  
 160 165 170  
 ttg ttt gag gct gtg gat ctt tcc att gat gag tcc agc ttg aca ggt 996

Leu Phe Glu Ala Val Asp Leu Ser Ile Asp Glu Ser Ser Leu Thr Gly  
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gag aca acg cct tgt tct aag gtg aca gct cct cag cca gct gca act 1044  
 Glu Thr Thr Pro Cys Ser Lys Val Thr Ala Pro Gln Pro Ala Ala Thr  
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 Val Arg Cys Gly Lys Ala Lys Gly Val Val Ile Gly Thr Gly Glu Asn  
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tct gaa ttt ggg gag gtt ttt aaa atg atg caa gca gaa gag gca cca 1188  
 Ser Glu Phe Gly Glu Val Phe Lys Met Met Gln Ala Glu Glu Ala Pro  
 240 245 250

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 Lys Thr Pro Leu Gln Lys Ser Met Asp Leu Leu Gly Lys Gln Leu Ser  
 255 260 265 270

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 Phe Tyr Ser Phe Gly Ile Ile Gly Ile Ile Met Leu Val Gly Trp Leu  
 275 280 285

ctg gga aaa gat atc ctg gaa atg ttt act att agt gta agt ttg gct 1332  
 Leu Gly Lys Asp Ile Leu Glu Met Phe Thr Ile Ser Val Ser Leu Ala  
 290 295 300

gta gca gca att cct gaa ggt ctc ccc att gtg gtc aca gtg acg cta 1380  
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gct ctt ggt gtt atg aga atg gtg aag aaa agg gcc att gtg aaa aag 1428  
 Ala Leu Gly Val Met Arg Met Val Lys Lys Arg Ala Ile Val Lys Lys  
 320 325 330

ctg cct att gtt gaa act ctg ggc tgc tgt aat gtg att tgt tca gat 1476  
 Leu Pro Ile Val Glu Thr Leu Gly Cys Cys Asn Val Ile Cys Ser Asp  
 335 340 345 350

aaa act gga aca ctg acg aag aat gaa atg act gtt act cac ata ttt 1524  
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Val Ile Arg Asn Asn Thr Leu Met Gly Lys Pro Thr Glu Gly Ala Leu			
415	420	425	430
att gct ctt gca atg aag atg ggt ctt gat gga ctt caa caa gac tac			1764
Ile Ala Leu Ala Met Lys Met Gly Leu Asp Gly Leu Gln Gln Asp Tyr			
435	440		445
atc aga aaa gct gaa tac cct ttt agc tct gag caa aag tgg atg gct			1812
Ile Arg Lys Ala Glu Tyr Pro Phe Ser Ser Glu Gln Lys Trp Met Ala			
450	455		460
gtt aag tgt gta cac cga aca cag cag gac aga cca gag att tgt ttt			1860
Val Lys Cys Val His Arg Thr Gln Gln Asp Arg Pro Glu Ile Cys Phe			
465	470		475
atg aaa ggt gct tac gaa caa gta att aag tac tgt act aca tac cag			1908
Met Lys Gly Ala Tyr Glu Gln Val Ile Lys Tyr Cys Thr Thr Tyr Gln			
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agc aaa ggg cag acc ttg aca ctt act cag cag cag aga gat gtg tac			1956
Ser Lys Gly Gln Thr Leu Thr Leu Thr Gln Gln Gln Arg Asp Val Tyr			
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caa caa gag aag gca cgc atg ggc tca gcg gga ctc aga gtt ctt gct			2004
Gln Gln Glu Lys Ala Arg Met Gly Ser Ala Gly Leu Arg Val Leu Ala			
515		520	525
ttg gct tct ggt cct gaa ctg gga cag ctg aca ttt ctt ggc ttg gtg			2052
Leu Ala Ser Gly Pro Glu Leu Gly Gln Leu Thr Phe Leu Gly Leu Val			
530		535	540
gga atc att gat cca cct aga act ggt gtg aaa gaa gct gtt aca aca			2100
Gly Ile Ile Asp Pro Pro Arg Thr Gly Val Lys Glu Ala Val Thr Thr			
545	550		555
ctc att gcc tca gga gta tca ata aaa atg att act gga gat tca cag			2148
Leu Ile Ala Ser Gly Val Ser Ile Lys Met Ile Thr Gly Asp Ser Gln			
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gag act gca gtt gca atc gcc agt cgt ctg gga ttg tat tcc aaa act			2196
Glu Thr Ala Val Ala Ile Ala Ser Arg Leu Gly Leu Tyr Ser Lys Thr			
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tcc cag tca gtc tca gga gaa gaa ata gat gca atg gat gtt cag cag			2244
Ser Gln Ser Val Ser Gly Glu Glu Ile Asp Ala Met Asp Val Gln Gln			
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ctt tca caa ata gta cca aag gtt gca gta ttt tac aga gct agc cca			2292
Leu Ser Gln Ile Val Pro Lys Val Ala Val Phe Tyr Arg Ala Ser Pro			
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agg cac aag atg aaa att att aag tgc cta cag aag aac ggt tca gtt			2340
Arg His Lys Met Lys Ile Ile Lys Ser Leu Gln Lys Asn Gly Ser Val			
625	630		635

100546-100547

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865 870 875

ttg ttt ctt ttg ggt ctc acc tca tca gtg tgc ata gtg gca gaa att 3108  
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880 885 890

ata aag aag gtt gaa agg agc agg gaa aag atc cag aag cat gtt agt 3156  
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895 900 905 910

tcg aca tca tca tct ttt ctt gaa gta tgatgcatat tgcattatatt 3203  
Ser Thr Ser Ser Ser Phe Leu Glu Val  
915

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Arg Val Glu Met Glu Asp Ala His Thr Ala Val Ile Gly Leu Pro Ser  
35 40 45  
Gly Leu Glu Ser Trp Ser Phe Phe Ala Val Tyr Asp Gly His Ala Gly  
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Ser Gln Val Ala Lys Tyr Cys Cys Glu His Leu Leu Asp His Ile Thr  
65 70 75 80  
Asn Asn Gln Asp Phe Lys Gly Ser Ala Gly Ala Pro Ser Val Glu Asn  
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Val Lys Asn Gly Ile Arg Thr Gly Phe Leu Glu Ile Asp Glu His Met  
100 105 110

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Ala	Val	Gly	Val	Leu	Ile	Ser	Pro	Gln	His	Thr	Tyr	Phe	Ile	Asn	Cys
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Gly	Asp	Ser	Arg	Gly	Leu	Leu	Cys	Arg	Asn	Arg	Lys	Val	His	Phe	Phe
145					150					155					160
Thr	Gln	Asp	His	Lys	Pro	Ser	Asn	Pro	Leu	Glu	Lys	Glu	Arg	Ile	Gln
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Asn	Ala	Gly	Gly	Ser	Val	Met	Ile	Gln	Arg	Val	Asn	Gly	Ser	Leu	Ala
			180					185					190		
Val	Ser	Arg	Ala	Leu	Gly	Asp	Phe	Asp	Tyr	Lys	Cys	Val	His	Gly	Lys
		195					200					205			
Gly	Pro	Thr	Glu	Gln	Leu	Val	Ser	Pro	Glu	Pro	Glu	Val	His	Asp	Ile
	210					215					220				
Glu	Arg	Ser	Glu	Glu	Asp	Asp	Gln	Phe	Ile	Ile	Leu	Ala	Cys	Asp	Gly
225					230					235					240
Ile	Trp	Asp	Val	Met	Gly	Asn	Glu	Glu	Leu	Cys	Asp	Phe	Val	Arg	Ser
				245					250					255	
Arg	Leu	Glu	Val	Thr	Asp	Asp	Leu	Glu	Lys	Val	Cys	Asn	Glu	Val	Val
			260					265					270		
Asp	Thr	Cys	Leu	Tyr	Lys	Gly	Ser	Arg	Asp	Asn	Met	Ser	Val	Ile	Leu
		275					280					285			
Ile	Cys	Phe	Pro	Asn	Ala	Pro	Lys	Val	Ser	Pro	Glu	Ala	Val	Lys	Lys
	290					295					300				
Glu	Ala	Glu	Leu	Asp	Lys	Tyr	Leu	Glu	Cys	Arg	Val	Glu	Glu	Ile	Ile
305					310					315					320
Lys	Lys	Gln	Gly	Glu	Gly	Val	Pro	Asp	Leu	Val	His	Val	Met	Arg	Thr
				325					330					335	
Leu	Ala	Ser	Glu	Asn	Ile	Pro	Ser	Leu	Pro	Pro	Gly	Gly	Glu	Leu	Ala
			340					345					350		
Ser	Lys	Arg	Asn	Val	Ile	Glu	Ala	Val	Tyr	Asn	Arg	Leu	Asn	Pro	Tyr
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<210> 136
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<212> DNA
<213> Homo sapiens
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<220>

<221> CDS

<222> (444)..(1589)

<400> 136

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tctagacagc tgaggcgcga aagcgatgag tctcggctc ttcctcctcc ttctccggga 180
cccgtctctt gcctccctct ccaacgcccg gatgatctga gccgcgaggg cgcgcacagc 240
cgggggcccc gacgcagccc ggctcctccc ctctccgcc ccttccccag cctgacctgg 300
cccgcgctg cagcggtgac ccctcccccg gctgccgcgc tcgccgcgc ggtgaccccc 360
tccccgctg ccgccgcgc cgctcggcc gaccaggac ctgccgcct gcggctgctc 420
cggacctaga ggatcaagac ata atg gga gca ttt tta gac aag cca aag atg 473
                        Met Gly Ala Phe Leu Asp Lys Pro Lys Met
                          1             5             10

gaa aag cat aat gcc cag ggg cag ggt aat ggg ttg cga tat ggg cta 521
Glu Lys His Asn Ala Gln Gly Gln Gly Asn Gly Leu Arg Tyr Gly Leu
                        15             20             25

agc agc atg caa ggc tgg cgt gtt gaa atg gag gat gca cat acg gct 569
Ser Ser Met Gln Gly Trp Arg Val Glu Met Glu Asp Ala His Thr Ala
                        30             35             40

gtg atc ggt ttg cca agt gga ctt gaa tcg tgg tca ttc ttt gct gtg 617
Val Ile Gly Leu Pro Ser Gly Leu Glu Ser Trp Ser Phe Phe Ala Val
                        45             50             55

tat gat ggg cat gct ggt tct cag gtt gcc aaa tac tgc tgt gag cat 665
Tyr Asp Gly His Ala Gly Ser Gln Val Ala Lys Tyr Cys Cys Glu His
                        60             65             70

ttg tta gat cac atc acc aat aac cag gat ttt aaa ggg tct gca gga 713
Leu Leu Asp His Ile Thr Asn Asn Gln Asp Phe Lys Gly Ser Ala Gly
                        75             80             85             90

gca cct tct gtg gaa aat gta aag aat gga atc aga aca ggt ttt ctg 761
Ala Pro Ser Val Glu Asn Val Lys Asn Gly Ile Arg Thr Gly Phe Leu
                        95             100             105

gag att gat gaa cac atg aga gtt atg tca gag aag aaa cat ggt gca 809
Glu Ile Asp Glu His Met Arg Val Met Ser Glu Lys Lys His Gly Ala
                        110             115             120

gat aga agt ggg tca aca gct gta ggt gtc tta att tct ccc caa cat 857
Asp Arg Ser Gly Ser Thr Ala Val Gly Val Leu Ile Ser Pro Gln His
                        125             130             135

act tat ttc att aac tgt gga gac tca aga ggt tta ctt tgt agg aac 905

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Thr	Tyr	Phe	Ile	Asn	Cys	Gly	Asp	Ser	Arg	Gly	Leu	Leu	Cys	Arg	Asn		
140						145					150						
agg	aaa	gtt	cat	ttc	ttc	aca	caa	gat	cac	aaa	cca	agt	aat	ccg	ctg	953	
Arg	Lys	Val	His	Phe	Phe	Thr	Gln	Asp	His	Lys	Pro	Ser	Asn	Pro	Leu		
155					160					165					170		
gag	aaa	gaa	cga	att	cag	aat	gca	ggg	ggc	tct	gta	atg	att	cag	cgt	1001	
Glu	Lys	Glu	Arg	Ile	Gln	Asn	Ala	Gly	Gly	Ser	Val	Met	Ile	Gln	Arg		
				175					180					185			
gtg	aat	ggc	tct	ctg	gct	gta	tcg	agg	gcc	ctt	ggg	gat	ttt	gat	tac	1049	
Val	Asn	Gly	Ser	Leu	Ala	Val	Ser	Arg	Ala	Leu	Gly	Asp	Phe	Asp	Tyr		
				190				195					200				
aaa	tgt	gtc	cat	gga	aaa	ggg	cct	act	gag	cag	ctt	gtc	tca	cca	gag	1097	
Lys	Cys	Val	His	Gly	Lys	Gly	Pro	Thr	Glu	Gln	Leu	Val	Ser	Pro	Glu		
		205					210					215					
cct	gaa	gtc	cat	gat	att	gaa	aga	tct	gaa	gaa	gat	gat	cag	ttc	att	1145	
Pro	Glu	Val	His	Asp	Ile	Glu	Arg	Ser	Glu	Glu	Asp	Asp	Gln	Phe	Ile		
		220				225					230						
atc	ctt	gca	tgt	gat	ggg	atc	tgg	gat	gtt	atg	gga	aat	gaa	gag	ctc	1193	
Ile	Leu	Ala	Cys	Asp	Gly	Ile	Trp	Asp	Val	Met	Gly	Asn	Glu	Glu	Leu		
235					240					245					250		
tgt	gat	ttt	gta	aga	tcc	aga	ctt	gaa	gtc	act	gat	gac	ctt	gag	aaa	1241	
Cys	Asp	Phe	Val	Arg	Ser	Arg	Leu	Glu	Val	Thr	Asp	Asp	Leu	Glu	Lys		
				255				260					265				
gtt	tgc	aat	gaa	gta	gtc	gac	acc	tgt	ttg	tat	aag	gga	agt	cga	gac	1289	
Val	Cys	Asn	Glu	Val	Val	Asp	Thr	Cys	Leu	Tyr	Lys	Gly	Ser	Arg	Asp		
			270					275					280				
aac	atg	agt	gtg	att	ttg	atc	tgt	ttt	cca	aat	gca	ccc	aaa	gta	tcg	1337	
Asn	Met	Ser	Val	Ile	Leu	Ile	Cys	Phe	Pro	Asn	Ala	Pro	Lys	Val	Ser		
		285					290					295					
cca	gaa	gca	gtg	aag	aag	gag	gca	gag	ttg	gac	aag	tac	ctg	gaa	tgc	1385	
Pro	Glu	Ala	Val	Lys	Lys	Glu	Ala	Glu	Leu	Asp	Lys	Tyr	Leu	Glu	Cys		
		300				305					310						
aga	gta	gaa	gaa	atc	ata	aag	aag	cag	ggg	gaa	ggc	gtc	ccc	gac	tta	1433	
Arg	Val	Glu	Glu	Ile	Ile	Lys	Lys	Gln	Gly	Glu	Gly	Val	Pro	Asp	Leu		
315					320				325						330		
gtc	cat	gtg	atg	cgc	aca	tta	gcg	agt	gag	aac	atc	ccc	agc	ctc	cca	1481	
Val	His	Val	Met	Arg	Thr	Leu	Ala	Ser	Glu	Asn	Ile	Pro	Ser	Leu	Pro		
				335					340					345			
cca	ggg	ggg	gaa	ttg	gca	agc	aag	agg	aat	gtt	att	gaa	gcc	gtt	tac	1529	
Pro	Gly	Gly	Glu	Leu	Ala	Ser	Lys	Arg	Asn	Val	Ile	Glu	Ala	Val	Tyr		
			350					355					360				
aat	aga	ctg	aat	cct	tac	aaa	aat	gac	gac	act	gac	tct	aca	tca	aca	1577	
Asn	Arg	Leu	Asn	Pro	Tyr	Lys	Asn	Asp	Asp	Thr	Asp	Ser	Thr	Ser	Thr		

365

370

375

gat gat atg tgg taaaactgct catctagcca tggagtttac cttcacctcc 1629  
Asp Asp Met Trp  
380

aaaggagagt acagctcaac ttgttgaaa cttttaacat ccctcctcaa ctttaaggaa 1689  
ggggatatga catgggtgag aatgattaca tcagagaact tcagcagtac aacagctagc 1749  
ccagaactga tttttttttt ttttttgtaa atttgagact tatgtaagcg tgatttcaaa 1809  
ccataattcg tgttgtaa at cagactccag caatttttgt tgtatgattt tgtttttttg 1869  
taaagtgtaa ttgtccttgt acaaaatgct catattta at tatgaactgc tttaaatcac 1929  
tatcaaagtt acaagaaatg ttgggcttat tgtgtgatgc aacagatata tagccctttc 1989  
aagtcagtgt gtgtttggac ttgggggttg aacagggaga gcagcagcca tgtcagctac 2049  
acgctcaa at gtgcagatga ttatggaaaa taacctcaaa atcttataaaa gctgaacatc 2109  
caaggagtta ttgaaaacta tcttaaatgt tcttggtagg ggagttggca ttgttgataa 2169  
agccagtccc ttcatttaac tgtctttcag gatgttccct cgttgtttcc atgagtattg 2229  
caggtataaa tacagtgtat tcataaga at ctcaatcttg gggctaaatg ccttgtttct 2289  
ttgcacctct tttcaagtcc ttacatttaa ttactaattg ataagcagca gcttcttaca 2349  
tatagtagga aactgccaca tttttgctat catgattggc tgggcctgct gctgttctta 2409  
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<210> 137  
<211> 358  
<212> PRT  
<213> Homo sapiens

<400> 137  
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Thr Ile Lys Tyr Lys Asp Glu Asp Gly Asp Leu Ile Thr Ile Phe Asp  
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Ser Ser Asp Leu Ser Phe Ala Ile Gln Cys Ser Arg Ile Leu Lys Leu  
35 40 45  
Thr Leu Phe Val Asn Gly Gln Pro Arg Pro Leu Glu Ser Ser Gln Val  
50 55 60  
Lys Tyr Leu Arg Arg Glu Leu Ile Glu Leu Arg Asn Lys Val Asn Arg  
65 70 75 80  
Leu Leu Asp Ser Leu Glu Pro Pro Gly Glu Pro Gly Pro Ser Thr Asn

85										90					95				
Ile	Pro	Glu	Asn	Asp	Thr	Val	Asp	Gly	Arg	Glu	Glu	Lys	Ser	Ala	Ser				
			100					105					110						
Asp	Ser	Ser	Gly	Lys	Gln	Ser	Thr	Gln	Val	Met	Ala	Ala	Ser	Met	Ser				
		115					120					125							
Ala	Phe	Asp	Pro	Leu	Lys	Asn	Gln	Asp	Glu	Ile	Asn	Lys	Asn	Val	Met				
		130				135					140								
Ser	Ala	Phe	Gly	Leu	Thr	Asp	Asp	Gln	Val	Ser	Gly	Pro	Pro	Ser	Ala				
145					150					155					160				
Pro	Ala	Glu	Asp	Arg	Ser	Gly	Thr	Pro	Asp	Ser	Ile	Ala	Ser	Ser	Ser				
				165					170					175					
Ser	Ala	Ala	His	Pro	Pro	Gly	Val	Gln	Pro	Gln	Gln	Pro	Pro	Tyr	Thr				
			180					185					190						
Gly	Ala	Gln	Thr	Gln	Ala	Gly	Gln	Met	Tyr	Gln	Gln	Tyr	Gln	Gln	Gln				
		195					200					205							
Ala	Gly	Tyr	Gly	Ala	Gln	Gln	Pro	Gln	Ala	Pro	Pro	Gln	Gln	Pro	Gln				
	210					215				220									
Gln	Tyr	Gly	Ile	Gln	Tyr	Ser	Ala	Ser	Tyr	Ser	Gln	Gln	Thr	Gly	Pro				
225					230					235					240				
Gln	Gln	Pro	Gln	Gln	Phe	Gln	Gly	Tyr	Gly	Gln	Gln	Pro	Thr	Ser	Gln				
				245					250					255					
Ala	Pro	Ala	Pro	Ala	Phe	Ser	Gly	Gln	Pro	Gln	Gln	Leu	Pro	Ala	Gln				
			260					265					270						
Pro	Pro	Gln	Gln	Tyr	Gln	Ala	Ser	Asn	Tyr	Pro	Ala	Gln	Thr	Tyr	Thr				
		275					280					285							
Ala	Gln	Thr	Ser	Gln	Pro	Thr	Asn	Tyr	Thr	Val	Ala	Pro	Ala	Ser	Gln				
	290					295					300								
Pro	Gly	Met	Ala	Pro	Ser	Gln	Pro	Gly	Ala	Tyr	Gln	Pro	Arg	Pro	Gly				
305					310					315					320				
Phe	Thr	Ser	Leu	Pro	Gly	Ser	Thr	Met	Thr	Pro	Pro	Pro	Ser	Gly	Pro				
				325					330					335					
Asn	Pro	Tyr	Ala	Arg	Asn	Arg	Pro	Pro	Phe	Gly	Gln	Gly	Tyr	Thr	Gln				
			340					345					350						
Pro	Gly	Pro	Gly	Tyr	Arg														
			355																

<210> 138  
 <211> 1519  
 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (11)..(1084)

<400> 138

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attagtgcata atg atg caa cga gtt ttc aga gga aaa ctt ctg agt aat      49
      Met Met Gln Arg Val Phe Arg Gly Lys Leu Leu Ser Asn
            1              5              10

gat gaa gta aca ata aag tat aaa gat gaa gat gga gat ctt ata aca      97
Asp Glu Val Thr Ile Lys Tyr Lys Asp Glu Asp Gly Asp Leu Ile Thr
      15              20              25

att ttt gat agt tct gac ctt tcc ttt gca att cag tgc agt agg ata      145
Ile Phe Asp Ser Ser Asp Leu Ser Phe Ala Ile Gln Cys Ser Arg Ile
      30              35              40              45

ctg aaa ctg aca tta ttt gtt aat ggc cag cca aga ccc ctt gaa tca      193
Leu Lys Leu Thr Leu Phe Val Asn Gly Gln Pro Arg Pro Leu Glu Ser
            50              55              60

agt cag gtg aaa tat ctc cgt cga gaa ctg ata gaa ctt cga aat aaa      241
Ser Gln Val Lys Tyr Leu Arg Arg Glu Leu Ile Glu Leu Arg Asn Lys
            65              70              75

gtg aat cgt tta ttg gat agc ttg gaa cca cct gga gaa cca gga cct      289
Val Asn Arg Leu Leu Asp Ser Leu Glu Pro Pro Gly Glu Pro Gly Pro
            80              85              90

tcc acc aat att cct gaa aat gat act gtg gat ggt agg gaa gaa aag      337
Ser Thr Asn Ile Pro Glu Asn Asp Thr Val Asp Gly Arg Glu Glu Lys
            95              100              105

tct gct tct gat tct tct gga aaa cag tct act cag gtt atg gca gca      385
Ser Ala Ser Asp Ser Ser Gly Lys Gln Ser Thr Gln Val Met Ala Ala
      110              115              120              125

agt atg tct gct ttt gat cct tta aaa aac caa gat gaa atc aat aaa      433
Ser Met Ser Ala Phe Asp Pro Leu Lys Asn Gln Asp Glu Ile Asn Lys
            130              135              140

aat gtt atg tca gcg ttt ggc tta aca gat gat cag gtt tca ggg cca      481
Asn Val Met Ser Ala Phe Gly Leu Thr Asp Asp Gln Val Ser Gly Pro
            145              150              155

ccc agt gct cct gca gaa gat cgt tca gga aca ccc gac agc att gct      529
Pro Ser Ala Pro Ala Glu Asp Arg Ser Gly Thr Pro Asp Ser Ile Ala
            160              165              170

tcc tcc tcc tca gca gct cac cca cca ggc gtt cag cca cag cag cca      577
Ser Ser Ser Ser Ala Ala His Pro Pro Gly Val Gln Pro Gln Gln Pro
            175              180              185

cca tat aca gga gct cag act caa gca ggt cag atg tac caa cag tac      625
Pro Tyr Thr Gly Ala Gln Thr Gln Ala Gly Gln Met Tyr Gln Gln Tyr

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190	195	200	205	
cag caa cag gcc ggc tat ggt gca cag cag ccg cag gct cca cct cag				673
Gln Gln Gln Ala Gly Tyr Gly Ala Gln Gln Pro Gln Ala Pro Pro Gln				
210		215	220	
cag cct caa cag tat ggt att cag tat tca gca agc tat agt cag cag				721
Gln Pro Gln Gln Tyr Gly Ile Gln Tyr Ser Ala Ser Tyr Ser Gln Gln				
225		230	235	
act gga ccc caa caa cct cag cag ttc cag gga tat ggc cag caa cca				769
Thr Gly Pro Gln Gln Pro Gln Gln Phe Gln Gly Tyr Gly Gln Gln Pro				
240		245	250	
act tcc cag gca cca gct cct gcc ttt tct ggt cag cct caa caa ctg				817
Thr Ser Gln Ala Pro Ala Pro Ala Phe Ser Gly Gln Pro Gln Gln Leu				
255		260	265	
cct gct cag ccg cca cag cag tac cag gcg agc aat tat cct gca caa				865
Pro Ala Gln Pro Pro Gln Gln Tyr Gln Ala Ser Asn Tyr Pro Ala Gln				
270		275	280	285
act tac act gcc caa act tct cag cct act aat tat act gtg gct cct				913
Thr Tyr Thr Ala Gln Thr Ser Gln Pro Thr Asn Tyr Thr Val Ala Pro				
290		295	300	
gcc tct caa cct gga atg gct cca agc caa cct ggg gcc tat caa cca				961
Ala Ser Gln Pro Gly Met Ala Pro Ser Gln Pro Gly Ala Tyr Gln Pro				
305		310	315	
aga cca ggt ttt act tca ctt cct gga agt acc atg acc cct cct cca				1009
Arg Pro Gly Phe Thr Ser Leu Pro Gly Ser Thr Met Thr Pro Pro Pro				
320		325	330	
agt ggg cct aat cct tat gcg cgt aac cgt cct ccc ttt ggt cag ggc				1057
Ser Gly Pro Asn Pro Tyr Ala Arg Asn Arg Pro Pro Phe Gly Gln Gly				
335		340	345	
tat acc caa cct gga cct ggt tat cga taaggaggct cctctacacc				1104
Tyr Thr Gln Pro Gly Pro Gly Tyr Arg				
350		355		
aattaatgta gctgctagct attggcctcc caaaagactc cagtactatt ttaatttgta				1164
ttgaagaagt tcagaaattt aaaagcagag catttttttat gatatcattg ttggtgttaa				1224
ttgaaagtat aatttgctgg aacacaaaga ccaaaatgaa agtttttttcc tccctgctta				1284
aaaatgtagc agcttcttag ttacttttga acactactct tacatgtata aagtgattga				1344
cttgactttc tagcttccct tgtccggagg atattaaaaat gctagggtga ggttttagcca				1404
tcttacttgg ctttttacta ttaacatgat gtactaaagt agagcccttt gagaatacaa				1464
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 <211> 396  
 <212> PRT  
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<400> 139

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Leu	Gly	Glu	Asp	Ile	Arg	Arg	Ile	Pro	Ile	His	Asn	Glu	Asp	Ile	Thr	20	25	30	
Tyr	Asp	Glu	Leu	Val	Leu	Met	Met	Gln	Arg	Val	Phe	Arg	Gly	Lys	Leu	35	40	45	
Leu	Ser	Asn	Asp	Glu	Val	Thr	Ile	Lys	Tyr	Lys	Asp	Glu	Asp	Gly	Asp	50	55	60	
Leu	Ile	Thr	Ile	Phe	Asp	Ser	Ser	Asp	Leu	Ser	Phe	Ala	Ile	Gln	Cys	65	70	75	80
Ser	Arg	Ile	Leu	Lys	Leu	Thr	Leu	Phe	Val	Asn	Gly	Gln	Pro	Arg	Pro	85	90	95	
Leu	Glu	Ser	Ser	Gln	Val	Lys	Tyr	Leu	Arg	Arg	Glu	Leu	Ile	Glu	Leu	100	105	110	
Arg	Asn	Lys	Val	Asn	Arg	Leu	Leu	Asp	Ser	Leu	Glu	Pro	Pro	Gly	Glu	115	120	125	
Pro	Gly	Pro	Ser	Thr	Asn	Ile	Pro	Glu	Asn	Asp	Thr	Val	Asp	Gly	Arg	130	135	140	
Glu	Glu	Lys	Ser	Ala	Ser	Asp	Ser	Ser	Gly	Lys	Gln	Ser	Thr	Gln	Val	145	150	155	160
Met	Ala	Ala	Ser	Met	Ser	Ala	Phe	Asp	Pro	Leu	Lys	Asn	Gln	Asp	Glu	165	170	175	
Ile	Asn	Lys	Asn	Val	Met	Ser	Ala	Phe	Gly	Leu	Thr	Asp	Asp	Gln	Val	180	185	190	
Ser	Gly	Pro	Pro	Ser	Ala	Pro	Ala	Glu	Asp	Arg	Ser	Gly	Thr	Pro	Asp	195	200	205	
Ser	Ile	Ala	Ser	Ser	Ser	Ser	Ala	Ala	His	Pro	Pro	Gly	Val	Gln	Pro	210	215	220	
Gln	Gln	Pro	Pro	Tyr	Thr	Gly	Ala	Gln	Thr	Gln	Ala	Gly	Gln	Met	Tyr	225	230	235	240
Gln	Gln	Tyr	Gln	Gln	Gln	Ala	Gly	Tyr	Gly	Ala	Gln	Gln	Pro	Gln	Ala	245	250	255	
Pro	Pro	Gln	Gln	Pro	Gln	Gln	Tyr	Gly	Ile	Gln	Tyr	Ser	Ala	Ser	Tyr	260	265	270	

**NOVEMBER 1960**

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<210> 140
<211> 1641
<212> DNA
<213> Homo sapiens
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<220>  
<221> CDS  
<222> (19) .. (1206)
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		Met	Asn	Gly	Gln	Leu	Asp	Leu	Ser	Gly	Lys	Leu				
		1					5				10					
atc	gtc	aaa	gct	caa	ctt	ggg	gag	gat	att	cgg	cga	att	cct	att	cat	99
Ile	Val	Lys	Ala	Gln	Leu	Gly	Glu	Asp	Ile	Arg	Arg	Ile	Pro	Ile	His	
			15					20					25			
aat	gaa	gat	att	act	tat	gat	gaa	tta	gtg	cta	atg	atg	caa	cga	gtt	147
Asn	Glu	Asp	Ile	Thr	Tyr	Asp	Glu	Leu	Val	Leu	Met	Met	Gln	Arg	Val	
		30					35					40				
ttc	aga	gga	aaa	ctt	ctg	agt	aat	gat	gaa	gta	aca	ata	aag	tat	aaa	195
Phe	Arg	Gly	Lys	Leu	Leu	Ser	Asn	Asp	Glu	Val	Thr	Ile	Lys	Tyr	Lys	
	45					50					55					
gat	gaa	gat	gga	gat	ctt	ata	aca	att	ttt	gat	agt	tct	gac	ctt	tcc	243
Asp	Glu	Asp	Gly	Asp	Leu	Ile	Thr	Ile	Phe	Asp	Ser	Ser	Asp	Leu	Ser	
60					65					70				75		
ttt	gca	att	cag	tgc	agt	agg	ata	ctg	aaa	ctg	aca	tta	ttt	gtt	aat	291
Phe	Ala	Ile	Gln	Cys	Ser	Arg	Ile	Leu	Lys	Leu	Thr	Leu	Phe	Val	Asn	



80	85	90	
ggc cag cca aga ccc ctt gaa tca agt cag gtg aaa tat ctc cgt cga			339
Gly Gln Pro Arg Pro Leu Glu Ser Ser Gln Val Lys Tyr Leu Arg Arg			
95	100	105	
gaa ctg ata gaa ctt cga aat aaa gtg aat cgt tta ttg gat agc ttg			387
Glu Leu Ile Glu Leu Arg Asn Lys Val Asn Arg Leu Leu Asp Ser Leu			
110	115	120	
gaa cca cct gga gaa cca gga cct tcc acc aat att cct gaa aat gat			435
Glu Pro Pro Gly Glu Pro Gly Pro Ser Thr Asn Ile Pro Glu Asn Asp			
125	130	135	
act gtg gat ggt agg gaa gaa aag tct gct tct gat tct tct gga aaa			483
Thr Val Asp Gly Arg Glu Glu Lys Ser Ala Ser Asp Ser Ser Gly Lys			
140	145	150	155
cag tct act cag gtt atg gca gca agt atg tct gct ttt gat cct tta			531
Gln Ser Thr Gln Val Met Ala Ala Ser Met Ser Ala Phe Asp Pro Leu			
160	165	170	
aaa aac caa gat gaa atc aat aaa aat gtt atg tca gcg ttt ggc tta			579
Lys Asn Gln Asp Glu Ile Asn Lys Asn Val Met Ser Ala Phe Gly Leu			
175	180	185	
aca gat gat cag gtt tca ggg cca ccc agt gct cct gca gaa gat cgt			627
Thr Asp Asp Gln Val Ser Gly Pro Pro Ser Ala Pro Ala Glu Asp Arg			
190	195	200	
tca gga aca ccc gac agc att gct tcc tcc tcc tca gca gct cac cca			675
Ser Gly Thr Pro Asp Ser Ile Ala Ser Ser Ser Ser Ala Ala His Pro			
205	210	215	
cca ggc gtt cag cca cag cag cca cca tat aca gga gct cag act caa			723
Pro Gly Val Gln Pro Gln Gln Pro Pro Tyr Thr Gly Ala Gln Thr Gln			
220	225	230	235
gca ggt cag atg tac caa cag tac cag caa cag gcc ggc tat ggt gca			771
Ala Gly Gln Met Tyr Gln Gln Tyr Gln Gln Gln Ala Gly Tyr Gly Ala			
240	245	250	
cag cag ccg cag gct cca cct cag cag cct caa cag tat ggt att cag			819
Gln Gln Pro Gln Ala Pro Pro Gln Gln Pro Gln Gln Tyr Gly Ile Gln			
255	260	265	
tat tca gca agc tat agt cag cag act gga ccc caa caa cct cag cag			867
Tyr Ser Ala Ser Tyr Ser Gln Gln Thr Gly Pro Gln Gln Pro Gln Gln			
270	275	280	
ttc cag gga tat ggc cag caa cca act tcc cag gca cca gct cct gcc			915
Phe Gln Gly Tyr Gly Gln Gln Pro Thr Ser Gln Ala Pro Ala Pro Ala			
285	290	295	
ttt tct ggt cag cct caa caa ctg cct gct cag ccg cca cag cag tac			963
Phe Ser Gly Gln Pro Gln Gln Leu Pro Ala Gln Pro Pro Gln Gln Tyr			
300	305	310	315

cag gcg agc aat tat cct gca caa act tac act gcc caa act tct cag 1011  
 Gln Ala Ser Asn Tyr Pro Ala Gln Thr Tyr Thr Ala Gln Thr Ser Gln  
                   320                                  325                                  330

cct act aat tat act gtg gct cct gcc tct caa cct gga atg gct cca 1059  
 Pro Thr Asn Tyr Thr Val Ala Pro Ala Ser Gln Pro Gly Met Ala Pro  
                   335                                  340                                  345

agc caa cct ggg gcc tat caa cca aga cca ggt ttt act tca ctt cct 1107  
 Ser Gln Pro Gly Ala Tyr Gln Pro Arg Pro Gly Phe Thr Ser Leu Pro  
                   350                                  355                                  360

gga agt acc atg acc cct cct cca agt ggg cct aat cct tat gcg cgt 1155  
 Gly Ser Thr Met Thr Pro Pro Pro Ser Gly Pro Asn Pro Tyr Ala Arg  
                   365                                  370                                  375

aac cgt cct ccc ttt ggt cag ggc tat acc caa cct gga cct ggt tat 1203  
 Asn Arg Pro Pro Phe Gly Gln Gly Tyr Thr Gln Pro Gly Pro Gly Tyr  
 380                                  385                                  390                                  395

cga taaggaggct cctctacacc aattaatgta gctgctagct attggcctcc 1256  
 Arg

caaaagactc cagtactatt ttaatttgta ttgaagaagt tcagaaattht aaaagcagag 1316

catttttttat gatatcattg ttggtgttaa ttgaaagtat aatttgctgg aacacaaaaga 1376

ccaaaatgaa agtttttttcc tccctgctta aaaatgtagc agcttcttag ttacttttga 1436

acactactct tacatgtata aagtgtattga cttgactttc tagcttccct tgtccggagg 1496

atattaaaat gctagggtga ggttttagcca tcttacttgg ctttttacta ttaacatgat 1556

gtactaaagt agagcccttt gagaatacaa gatattatgt ataaaatgta aactgatga 1616

taggttaata aagatgattg aatcc 1641

<210> 141

<211> 323

<212> PRT

<213> Homo sapiens

<400> 141

Met Ala Phe Ser Gly Ser Gln Ala Pro Tyr Leu Ser Pro Ala Val Pro  
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Phe Ser Gly Thr Ile Gln Gly Gly Leu Gln Asp Gly Leu Gln Ile Thr  
                   20                                  25                                  30

Val Asn Gly Thr Val Leu Ser Ser Gly Thr Arg Phe Ala Val Asn  
                   35                                  40                                  45

Phe Gln Thr Gly Phe Ser Gly Asn Asp Ile Ala Phe His Phe Asn Pro  
                   50                                  55                                  60

Arg Phe Glu Asp Gly Gly Tyr Val Val Cys Asn Thr Arg Gln Asn Gly  
 65 70 75 80  
 Ser Trp Gly Pro Glu Glu Arg Lys Thr His Met Pro Phe Gln Lys Gly  
 85 90 95  
 Met Pro Phe Asp Leu Cys Phe Leu Val Gln Ser Ser Asp Phe Lys Val  
 100 105 110  
 Met Val Asn Gly Ile Leu Phe Val Gln Tyr Phe His Arg Val Pro Phe  
 115 120 125  
 His Arg Val Asp Thr Ile Ser Val Asn Gly Ser Val Gln Leu Ser Tyr  
 130 135 140  
 Ile Ser Phe Gln Pro Pro Gly Val Trp Pro Ala Asn Pro Ala Pro Ile  
 145 150 155 160  
 Thr Gln Thr Val Ile His Thr Val Gln Ser Ala Pro Gly Gln Met Phe  
 165 170 175  
 Ser Thr Pro Ala Ile Pro Pro Met Met Tyr Pro His Pro Ala Tyr Pro  
 180 185 190  
 Met Pro Phe Ile Thr Thr Ile Leu Gly Gly Leu Tyr Pro Ser Lys Ser  
 195 200 205  
 Ile Leu Leu Ser Gly Thr Val Leu Pro Ser Ala Gln Arg Phe His Ile  
 210 215 220  
 Asn Leu Cys Ser Gly Asn His Ile Ala Phe His Leu Asn Pro Arg Phe  
 225 230 235 240  
 Asp Glu Asn Ala Val Val Arg Asn Thr Gln Ile Asp Asn Ser Trp Gly  
 245 250 255  
 Ser Glu Glu Arg Ser Leu Pro Arg Lys Met Pro Phe Val Arg Gly Gln  
 260 265 270  
 Ser Phe Ser Val Trp Ile Leu Cys Glu Ala His Cys Leu Lys Val Ala  
 275 280 285  
 Val Asp Gly Gln His Leu Phe Glu Tyr Tyr His Arg Leu Arg Asn Leu  
 290 295 300  
 Pro Thr Ile Asn Arg Leu Glu Val Gly Gly Asp Ile Gln Leu Thr His  
 305 310 315 320  
 Val Gln Thr

<210> 142  
 <211> 1616  
 <212> DNA  
 <213> Homo sapiens

<220>

<221> CDS

<222> (72)..(1040)

<400> 142

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gcggcggaga g atg gcc ttc agc ggt tcc cag gct ccc tac ctg agt cca 110
      Met Ala Phe Ser Gly Ser Gln Ala Pro Tyr Leu Ser Pro
        1             5             10

gct gtc ccc ttt tct ggg act att caa gga ggt ctc cag gac gga ctt 158
Ala Val Pro Phe Ser Gly Thr Ile Gln Gly Gly Leu Gln Asp Gly Leu
      15             20             25

cag atc act gtc aat ggg acc gtt ctc agc tcc agt gga acc agg ttt 206
Gln Ile Thr Val Asn Gly Thr Val Leu Ser Ser Ser Gly Thr Arg Phe
      30             35             40             45

gct gtg aac ttt cag act ggc ttc agt gga aat gac att gcc ttc cac 254
Ala Val Asn Phe Gln Thr Gly Phe Ser Gly Asn Asp Ile Ala Phe His
              50             55             60

ttc aac cct cgg ttt gaa gat gga ggg tac gtg gtg tgc aac acg agg 302
Phe Asn Pro Arg Phe Glu Asp Gly Gly Tyr Val Val Cys Asn Thr Arg
              65             70             75

cag aac gga agc tgg ggg ccc gag gag agg aag aca cac atg cct ttc 350
Gln Asn Gly Ser Trp Gly Pro Glu Glu Arg Lys Thr His Met Pro Phe
              80             85             90

cag aag ggg atg ccc ttt gac ctc tgc ttc ctg gtg cag agc tca gat 398
Gln Lys Gly Met Pro Phe Asp Leu Cys Phe Leu Val Gln Ser Ser Asp
              95             100             105

ttc aag gtg atg gtg aac ggg atc ctc ttc gtg cag tac ttc cac cgc 446
Phe Lys Val Met Val Asn Gly Ile Leu Phe Val Gln Tyr Phe His Arg
      110             115             120             125

gtg ccc ttc cac cgt gtg gac acc atc tcc gtc aat ggc tct gtg cag 494
Val Pro Phe His Arg Val Asp Thr Ile Ser Val Asn Gly Ser Val Gln
              130             135             140

ctg tcc tac atc agc ttc cag cct ccc ggc gtg tgg cct gcc aac ccg 542
Leu Ser Tyr Ile Ser Phe Gln Pro Pro Gly Val Trp Pro Ala Asn Pro
              145             150             155

gct ccc att acc cag aca gtc atc cac aca gtg cag agc gcc cct gga 590
Ala Pro Ile Thr Gln Thr Val Ile His Thr Val Gln Ser Ala Pro Gly
              160             165             170

cag atg ttc tct act ccc gcc atc cca cct atg atg tac ccc cac ccc 638
Gln Met Phe Ser Thr Pro Ala Ile Pro Pro Met Met Tyr Pro His Pro
              175             180             185

gcc tat ccg atg cct ttc atc acc acc att ctg gga ggg ctg tac cca 686
Ala Tyr Pro Met Pro Phe Ile Thr Thr Ile Leu Gly Gly Leu Tyr Pro

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190	195	200	205	
tcc aag tcc atc ctc ctg tca ggc act gtc ctg ccc agt gct cag agg				734
Ser Lys Ser Ile Leu Leu Ser Gly Thr Val Leu Pro Ser Ala Gln Arg	210	215	220	
ttc cac atc aac ctg tgc tct ggg aac cac atc gcc ttc cac ctg aac				782
Phe His Ile Asn Leu Cys Ser Gly Asn His Ile Ala Phe His Leu Asn	225	230	235	
ccc cgt ttt gat gag aat gct gtg gtc cgc aac acc cag atc gac aac				830
Pro Arg Phe Asp Glu Asn Ala Val Val Arg Asn Thr Gln Ile Asp Asn	240	245	250	
tcc tgg ggg tct gag gag cga agt ctg ccc cga aaa atg ccc ttc gtc				878
Ser Trp Gly Ser Glu Glu Arg Ser Leu Pro Arg Lys Met Pro Phe Val	255	260	265	
cgt ggc cag agc ttc tca gtg tgg atc ttg tgt gaa gct cac tgc ctc				926
Arg Gly Gln Ser Phe Ser Val Trp Ile Leu Cys Glu Ala His Cys Leu	270	275	285	
aag gtg gcc gtg gat ggt cag cac ctg ttt gaa tac tac cat cgc ctg				974
Lys Val Ala Val Asp Gly Gln His Leu Phe Glu Tyr Tyr His Arg Leu	290	295	300	
agg aac ctg ccc acc atc aac aga ctg gaa gtg ggg ggc gac atc cag				1022
Arg Asn Leu Pro Thr Ile Asn Arg Leu Glu Val Gly Gly Asp Ile Gln	305	310	315	
ctg acc cat gtg cag aca taggcggcctt cctggccctg gggccggggg				1070
Leu Thr His Val Gln Thr	320			
ctgggggtgtg gggcagtcctg ggctcctctca tcatccccac ttcccaggcc cagcctttcc				1130
aaccctgcct gggatctggg ctttaatgca gaggccatgt ccttgtctgg tctgtcttct				1190
ggctacagcc accctggaac ggagaaggca gctgacgggg attgccttcc tcagccgcag				1250
cagcacctgg ggctccagct gctggaatcc taccatccca ggaggcaggc acagccaggg				1310
agagggggagg agtgggcagt gaagatgaag ccccatgctc agtcccttcc catccccac				1370
gcagctccac ccagtcacca agccaccagc tgtctgctcc tgggtgggagg tggcctctc				1430
agcccctcct ctctgacctt taacctcaact ctcaccttgc accgtgcacc aacccttcac				1490
ccctcctgga aagcaggcct gatggcttcc cactggcctc caccacctga ccagagtgtt				1550
ctcttcagag gactggctcc ttcccagtg tccttaaaat aaagaaatga aaatgcttgt				1610
tggcac				1616
<210> 143				
<211> 136				

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 143

Met Ala Gly Ala Ile Ile Glu Asn Met Ser Thr Lys Lys Leu Cys Ile  
 1 5 10 15

Val Gly Gly Ile Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly  
 20 25 30

Gly Leu Ile Ala Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val  
 35 40 45

Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val  
 50 55 60

Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala  
 65 70 75 80

Ile Pro Arg Glu Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile  
 85 90 95

Pro Leu Pro His Met Ala Leu Ser Cys Gly Phe Leu Asp Gln Arg His  
 100 105 110

Gly His Leu Ser Val Cys Leu Leu Thr Val Ala Phe Gly Gly Arg Phe  
 115 120 125

Leu Gln Pro Leu Met His Cys Val  
 130 135

&lt;210&gt; 144

&lt;211&gt; 1252

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (225)..(632)

&lt;400&gt; 144

acaatcacag ctccgggcat tgggggaacc cgagccggct gcgccggggg aatccgtgcg 60

ggcgcccttcc gtcccggtcc catcctcgcc gcgctccagc acctctgaag ttttgcagcg 120

cccagaaagg aggcgaggaa ggagggagtg tgtgagagga gggagcaaaa agctcacct 180

aaaacattta tttcaaggag aaaagaaaaa gggggggcgc aaaa atg gct ggg gca 236  
 Met Ala Gly Ala  
 1

att ata gaa aac atg agc acc aag aag ctg tgc att gtt ggt ggg att 284

Ile Ile Glu Asn Met Ser Thr Lys Lys Leu Cys Ile Val Gly Gly Ile  
 5 10 15 20

ctg ctc gtg ttc caa atc atc gcc ttt ctg gtg gga ggc ttg att gct 332

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Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly Gly Leu Ile Ala
      25              30              35

cca ggg ccc aca acg gca gtg tcc tac atg tcg gtg aaa tgt gtg gat 380
Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val Lys Cys Val Asp
      40              45              50

gcc cgt aag aac cat cac aag aca aaa tgg ttc gtg cct tgg gga ccc 428
Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val Pro Trp Gly Pro
      55              60              65

aat cat tgt gac aag atc cga gac att gaa gag gca att cca agg gaa 476
Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala Ile Pro Arg Glu
      70              75              80

att gaa gcc aat gac atc gtg ttt tct gtt cac att ccc ctc ccc cac 524
Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile Pro Leu Pro His
      85              90              95

atg gct ctt agc tgt ggt ttc ttg gac cag cgg cat gga cat ttg tca 572
Met Ala Leu Ser Cys Gly Phe Leu Asp Gln Arg His Gly His Leu Ser
      105              110              115

gtt tgc ctt ctg acg gta gct ttt gga gga aga ttc ctg cag cca cta 620
Val Cys Leu Leu Thr Val Ala Phe Gly Gly Arg Phe Leu Gln Pro Leu
      120              125              130

atg cat tgt gta tgataacaaa aactctggta tgacacattt tctgtgatca 672
Met His Cys Val
      135

ttgttaatta gtgacatagt aacatctgta gcagctgggt agtaaacctc atgtgggggt 732

gggggtggggg tgtattcctt gggggatggt ttggggccgaa tggggagtgg aatatttgac 792

atttttcctg ttttaaattc taggatagat tttaacatcc tttgcgggtcc cagtccaagg 852

taggctgggtg tcatagtctt ctcaactccta atccatgacc actgtttttt tcctatttat 912

atcaccaggt agcctactga gttaatatatt aagttgtcaa tagataagtg tcctgtttt 972

gtggcataat ataactgaat ttcattgagaa gattttattcc accaggggta tttcagcttt 1032

gaaaccaaatt ctgtgtatct aataactaacc aatctgttgg atgtggggtt taaaaaatgt 1092

ttgctaaact acccaagtaa gatttactgt attaaatggc cttcgggtct gaaaagcttt 1152

tttaacctct tgcttaaaat gcgtttttatt ttgataagat acttcaaata gcctccaaaa 1212

gtgtagatcc aatcacttaa ataaacctgt atgtatatgc 1252

<210> 145
<211> 468
<212> PRT
<213> Homo sapiens

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1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

<400> 145

Met Pro Val Arg Thr Ile Thr Arg Gln Asn Gly Ser Cys Leu Gly Asp  
1 5 10 15

Pro Ile Ile Val Thr Arg Ser Glu Thr Leu Lys Arg Gln Phe Gln Phe  
20 25 30

Met Leu Phe Ile Leu Gln Leu Asp Ile Ala Phe Lys Leu Asn Asn Gln  
35 40 45

Ile Arg Glu Asn Ala Glu Val Ser Met Asp Val Ser Leu Ala Tyr Arg  
50 55 60

Asp Asp Ala Phe Ala Glu Trp Thr Glu Met Ala His Glu Arg Val Pro  
65 70 75 80

Arg Lys Leu Lys Cys Thr Phe Thr Ser Pro Lys Thr Pro Glu His Glu  
85 90 95

Gly Arg Tyr Tyr Glu Cys Asp Val Leu Pro Phe Met Glu Ile Gly Ser  
100 105 110

Val Ala His Lys Phe Tyr Leu Leu Asn Ile Arg Leu Pro Val Asn Glu  
115 120 125

Lys Lys Lys Ile Asn Val Gly Ile Gly Glu Ile Lys Asp Ile Arg Leu  
130 135 140

Val Gly Ile His Gln Asn Gly Gly Phe Thr Lys Val Trp Phe Ala Met  
145 150 155 160

Lys Thr Phe Leu Thr Pro Ser Ile Phe Ile Ile Met Val Trp Tyr Trp  
165 170 175

Arg Arg Ile Thr Met Met Ser Arg Pro Pro Val Leu Leu Glu Lys Val  
180 185 190

Ile Phe Ala Leu Gly Ile Ser Met Thr Phe Ile Asn Ile Pro Val Glu  
195 200 205

Trp Phe Ser Ile Gly Phe Asp Trp Thr Trp Met Leu Leu Phe Gly Asp  
210 215 220

Ile Arg Gln Gly Ile Phe Tyr Ala Met Leu Leu Ser Phe Trp Ile Ile  
225 230 235 240

Phe Cys Gly Glu His Met Met Asp Gln His Glu Arg Asn His Ile Ala  
245 250 255

Gly Tyr Trp Lys Gln Val Gly Pro Ile Ala Val Gly Ser Phe Cys Leu  
260 265 270

Phe Ile Phe Asp Met Cys Glu Arg Gly Val Gln Leu Thr Asn Pro Phe  
275 280 285

Tyr Ser Ile Trp Thr Thr Asp Ile Gly Thr Glu Leu Ala Met Ala Phe  
290 295 300



[illegible]

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<210> 146
<211> 1943
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> (379)..(1782)
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<400> 146
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cccagaaagg aggcgaggaa ggagggagtg tgtgagagga gggagcaaaa agctcacctt 180
aaaacattta tttcaaggag aaaagaaaaa gggggggcgc aaaaatggct ggggcaatta 240
tagaaaacat gagcaccaag aagctgtgca ttgttggtgg gattctgtct gtgttccaaa 300
tcatcgctt tctggtggga gqcttgattg ctccagggcc cacaacggca gtgtcctaca 360
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tgtcgggtgaa	atgtgttg	atg	ccc	gta	aga	acc	atc	aca	aga	caa	aat	ggt	411			
		Met	Pro	Val	Arg	Thr	Ile	Thr	Arg	Gln	Asn	Gly				
		1				5					10					
tcg	tgc	ctt	ggg	gac	cca	atc	att	gtg	aca	aga	tcc	gag	aca	ttg	aag	459
Ser	Cys	Leu	Gly	Asp	Pro	Ile	Ile	Val	Thr	Arg	Ser	Glu	Thr	Leu	Lys	
			15					20					25			
agg	caa	ttc	caa	ttc	atg	ctg	ttt	atc	ctg	cag	ctg	gac	att	gcc	ttc	507
Arg	Gln	Phe	Gln	Phe	Met	Leu	Phe	Ile	Leu	Gln	Leu	Asp	Ile	Ala	Phe	
		30					35					40				
aag	cta	aac	aac	caa	atc	aga	gaa	aat	gca	gaa	gtc	tcc	atg	gac	gtt	555
Lys	Leu	Asn	Asn	Gln	Ile	Arg	Glu	Asn	Ala	Glu	Val	Ser	Met	Asp	Val	
	45					50					55					
tcc	ctg	gct	tac	cgt	gat	gac	gcg	ttt	gct	gag	tgg	act	gaa	atg	gcc	603
Ser	Leu	Ala	Tyr	Arg	Asp	Asp	Ala	Phe	Ala	Glu	Trp	Thr	Glu	Met	Ala	
	60				65					70					75	
cat	gaa	aga	gta	cca	cg	aaa	ctc	aaa	tgc	acc	ttc	aca	tct	ccc	aag	651
His	Glu	Arg	Val	Pro	Arg	Lys	Leu	Lys	Cys	Thr	Phe	Thr	Ser	Pro	Lys	
				80					85					90		
act	cca	gag	cat	gag	ggc	cgt	tac	tat	gaa	tgt	gat	gtc	ctt	cct	ttc	699
Thr	Pro	Glu	His	Glu	Gly	Arg	Tyr	Tyr	Glu	Cys	Asp	Val	Leu	Pro	Phe	
			95					100					105			
atg	gaa	att	ggg	tct	gtg	gcc	cat	aag	ttt	tac	ctt	tta	aac	atc	cgg	747
Met	Glu	Ile	Gly	Ser	Val	Ala	His	Lys	Phe	Tyr	Leu	Leu	Asn	Ile	Arg	
		110					115					120				
ctg	cct	gtg	aat	gag	aag	aag	aaa	atc	aat	gtg	gga	att	ggg	gag	ata	795
Leu	Pro	Val	Asn	Glu	Lys	Lys	Lys	Ile	Asn	Val	Gly	Ile	Gly	Glu	Ile	
	125					130					135					
aag	gat	atc	cgg	ttg	gtg	ggg	atc	cac	caa	aat	gga	ggc	ttc	acc	aag	843
Lys	Asp	Ile	Arg	Leu	Val	Gly	Ile	His	Gln	Asn	Gly	Gly	Phe	Thr	Lys	
	140				145					150					155	
gtg	tgg	ttt	gcc	atg	aag	acc	ttc	ctt	acg	ccc	agc	atc	ttc	atc	att	891
Val	Trp	Phe	Ala	Met	Lys	Thr	Phe	Leu	Thr	Pro	Ser	Ile	Phe	Ile	Ile	
				160					165					170		
atg	gtg	tgg	tat	tgg	agg	agg	atc	acc	atg	atg	tcc	cga	ccc	cca	gtg	939
Met	Val	Trp	Tyr	Trp	Arg	Arg	Ile	Thr	Met	Met	Ser	Arg	Pro	Pro	Val	
			175					180					185			
ctt	ctg	gaa	aaa	gtc	atc	ttt	gcc	ctt	ggg	att	tcc	atg	acc	ttt	atc	987
Leu	Leu	Glu	Lys	Val	Ile	Phe	Ala	Leu	Gly	Ile	Ser	Met	Thr	Phe	Ile	
		190					195					200				
aat	atc	cca	gtg	gaa	tgg	ttt	tcc	atc	ggg	ttt	gac	tgg	acc	tgg	atg	1035
Asn	Ile	Pro	Val	Glu	Trp											

Leu	Leu	Phe	Gly	Asp	Ile	Arg	Gln	Gly	Ile	Phe	Tyr	Ala	Met	Leu	Leu	
220					225				230						235	
tcc	ttc	tgg	atc	atc	ttc	tgt	ggc	gag	cac	atg	atg	gat	cag	cac	gag	1131
Ser	Phe	Trp	Ile	Ile	Phe	Cys	Gly	Glu	His	Met	Met	Asp	Gln	His	Glu	
			240					245					250			
cgg	aac	cac	atc	gca	ggg	tat	tgg	aag	caa	gtc	gga	ccc	att	gcc	gtt	1179
Arg	Asn	His	Ile	Ala	Gly	Tyr	Trp	Lys	Gln	Val	Gly	Pro	Ile	Ala	Val	
			255					260					265			
ggc	tcc	ttc	tgc	ctc	ttc	ata	ttt	gac	atg	tgt	gag	aga	ggg	gta	caa	1227
Gly	Ser	Phe	Cys	Leu	Phe	Ile	Phe	Asp	Met	Cys	Glu	Arg	Gly	Val	Gln	
		270					275					280				
ctc	acg	aat	ccc	ttc	tac	agt	atc	tgg	act	aca	gac	att	gga	aca	gag	1275
Leu	Thr	Asn	Pro	Phe	Tyr	Ser	Ile	Trp	Thr	Thr	Asp	Ile	Gly	Thr	Glu	
	285					290					295					
ctg	gcc	atg	gcc	ttc	atc	atc	gtg	gct	gga	atc	tgc	ctc	tgc	ctc	tac	1323
Leu	Ala	Met	Ala	Phe	Ile	Ile	Val	Ala	Gly	Ile	Cys	Leu	Cys	Leu	Tyr	
300					305					310					315	
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Tyr	Glu	Gly	Leu	Ile	Phe	Arg	Phe	Lys	Phe	Leu	Met	Leu	Ile	Thr	Leu	
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Phe	Phe	Thr	Gly	Ile	Tyr	Gly	Met	Trp	Asn	Leu	Tyr	Val	Phe	Ala	Leu	
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 Gly Glu Ile Lys Asp Ile Arg Leu Val Gly Ile His Gln Asn Gly Gly  
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 Pro Pro Val Leu Leu Glu Lys Val Ile Phe Ala Leu Gly Ile Ser Met  
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Gln Val Thr Glu Gly His Trp Lys Trp Gly Gly Ile Thr Val Gln Val  
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Leu Ser Ser Ala Ser Ser Pro Ser Ser Tyr Pro Ala Pro Pro Thr Ser	
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Thr Ser Pro Val Leu Asp His Ser Glu Thr Ser Asp Gln Lys Phe Tyr	
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Asn Phe Val Val Ile His Ala Arg Ala Asp Glu Gln Val Ala Leu Arg	
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Ile Arg Glu Lys Leu Glu Thr Leu Gly Val Pro Asp Gly Ala Thr Phe	
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Cys 430	Glu	Glu	Phe	Gln	Val	Pro	Gly	Arg	Gly	Glu	Leu	His	Cys	Leu	Gln	
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Asp	Ala	Ile	Asp	His	Ser	Gly	Phe	Thr	Ile	Leu	Leu	Leu	Thr	Ala	Ser	
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Phe	Asp	Cys	Ser	Leu	Ser	Leu	His	Gln	Ile	Asn	His	Ala	Leu	Met	Asn	
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Ser	Leu	Thr	Gln	Ser	Gly	Arg	Gln	Asp	Cys	Val	Ile	Pro	Leu	Leu	Pro	
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Leu	Glu	Cys	Ser	Gln	Ala	Gln	Leu	Ser	Pro	Asp	Thr	Thr	Arg	Leu	Leu	
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Val	Ala	Asn	Thr	Phe	Lys	Thr	Gln	Lys	Leu	Gln	Ala	Gln	Arg	Val	Arg	
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Trp	Lys	Lys	Ala	Gln	Glu	Ala	Arg	Thr	Leu	Lys	Glu	Gln	Ser	Ile	Gln	
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Trp	Pro	Gly	Cys	Pro	Gln	Pro	Ile	Pro	Ser	His	Pro	Gln	Gly	Gly	Thr	
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Cys	Phe	Pro	Gln	Pro	Pro	Ser	Phe	Pro	Gln	Pro	Pro	Ser	Phe	Pro	Leu	
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Gln Met Val Gln Leu Gly Val Asn Asn His Met Trp Gly His Thr Gly	
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Asp His Ser Gly	Phe Thr Ile Leu Leu Leu Thr Ala Ser Phe Asp Cys					
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Gln Ser Gly Arg	Gln Asp Cys Val Ile Pro Leu Leu Pro Leu Glu Cys					
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Val Trp Leu Asp	Glu His Ser Pro Ile Phe Ala Arg Lys Val Ala Asn					
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Glu Arg Gln Asn	Val Ala Ala Ile Ser Ala Ala Tyr Thr Ala Tyr Val					
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His Ser Tyr Arg	Ala Trp Gln Ala Glu Met Asn Lys Leu Gly Val Ala					
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Phe Gly Lys Asn	Leu Ser Leu Gly Thr Pro Thr Pro Ser Trp Pro Gly					
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Cys Pro Gln Pro	Ile Pro Ser His Pro Gln Gly Gly Thr Pro Val Phe					
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Pro Tyr Ser Pro	Gln Pro Pro Ser Phe Pro Gln Pro Pro Cys Phe Pro					
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Gln Pro Pro Ser	Phe Pro Gln Pro Pro Ser Phe Pro Leu Pro Pro Val					
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Ser Ser Pro Gln	Ser Gln Ser Phe Pro Ser Ala Ser Ser Pro Ala Pro					
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Gln Thr Pro Gly	Pro Gln Pro Leu Ile Ile His His Ala Gln Met Val					
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Gln Leu Gly Val	Asn Asn His Met Trp Gly His Thr Gly Ala Gln Ser					



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                               Met Ala Cys Thr Gly Pro
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tca ctt cct agc gcc ttc gac att cta ggt gca gca ggc cag gac aag 162
Ser Leu Pro Ser Ala Phe Asp Ile Leu Gly Ala Ala Gly Gln Asp Lys
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Leu Leu Tyr Leu Lys His Lys Leu Lys Thr Pro Arg Pro Gly Cys Gln
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Gly Gln Asp Leu Leu His Ala Met Val Leu Leu Lys Leu Gly Gln Glu
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Thr Glu Ala Arg Ile Ser Leu Glu Ala Leu Lys Ala Asp Ala Val Ala
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cgg ctg gtg gcc cgc cag tgg gct ggc gtg gac agc acc gag gac cca 354
Arg Leu Val Ala Arg Gln Trp Ala Gly Val Asp Ser Thr Glu Asp Pro
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gag gag ccc cca gat gtg tcc tgg gct gtg gcc cgc ttg tac cac ctg 402
Glu Glu Pro Pro Asp Val Ser Trp Ala Val Ala Arg Leu Tyr His Leu
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Cys Gln Glu Pro Glu Glu Met Ser Trp Pro Pro Ser Gly Glu Ile Ala	
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Ser Pro Pro Glu Leu Pro Ser Ser Pro Pro Pro Gly Leu Pro Glu Val	
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 Pro Gly Leu Pro Glu Val Ala Pro Asp Ala Thr Ser Thr Gly Leu Pro  
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 Asp Thr Pro Ala Ala Pro Glu Thr Ser Thr Asn Tyr Pro Val Glu Cys  
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 Thr Glu Gly Ser Ala Gly Pro Gln Ser Leu Pro Leu Pro Ile Leu Glu  
           305                          310                          315                          320  
 Pro Val Lys Asn Pro Cys Ser Val Lys Asp Gln Thr Pro Leu Gln Leu  
                           325                          330                          335

Ser Val Glu Asp Thr Thr Ser Pro Asn Thr Lys Pro Cys Pro Pro Thr  
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Pro Thr Thr Pro Glu Thr Ser Pro Pro Pro Pro Pro Pro Pro Ser  
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Ser Thr Pro Cys Ser Ala His Leu Thr Pro Ser Ser Leu Phe Pro Ser  
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Ser Leu Glu Ser Ser Ser Glu Gln Lys Phe Tyr Asn Phe Val Ile Leu  
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His Ala Arg Ala Asp Glu His Ile Ala Leu Arg Val Arg Glu Lys Leu  
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Glu Ala Leu Gly Val Pro Asp Gly Ala Thr Phe Cys Glu Asp Phe Gln  
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Val Pro Gly Arg Gly Glu Leu Ser Cys Leu Gln Asp Ala Ile Asp His  
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Ser Ala Phe Ile Ile Leu Leu Leu Thr Ser Asn Phe Asp Cys Arg Leu  
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Ser Leu His Gln Val Asn Gln Ala Met Met Ser Asn Leu Thr Arg Gln  
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Gly Ser Pro Asp Cys Val Ile Pro Phe Leu Pro Leu Glu Ser Ser Pro  
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Ala Gln Leu Ser Ser Asp Thr Ala Ser Leu Leu Ser Gly Leu Val Arg  
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Leu Asp Glu His Ser Gln Ile Phe Ala Arg Lys Val Ala Asn Thr Phe  
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Lys Pro His Arg Leu Gln Ala Arg Lys Ala Met Trp Arg Lys Glu Gln  
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Asp Thr Arg Ala Leu Arg Glu Gln Ser Gln His Leu Asp Gly Glu Arg  
545 550 555 560

Met Gln Ala Ala Ala Leu Asn Ala Ala Tyr Ser Ala Tyr Leu Gln Ser  
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Tyr Leu Ser Tyr Gln Ala Gln Met Glu Gln Leu Gln Val Ala Phe Gly  
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Ser His Met Ser Phe Gly Thr Gly Ala Pro Tyr Gly Ala Arg Met Pro  
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Phe Gly Gly Gln Val Pro Leu Gly Ala Pro Pro Pro Phe Pro Thr Trp  
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Pro Gly Cys Pro Gln Pro Pro Pro Leu His Ala Trp Gln Ala Gly Thr  
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Pro Pro Pro Pro Ser Pro Gln Pro Ala Ala Phe Pro Gln Ser Leu Pro  
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Phe Pro Gln Ser Pro Ala Phe Pro Thr Ala Ser Pro Ala Pro Pro Gln  
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Ser Pro Gly Leu Gln Pro Leu Ile Ile His His Ala Gln Met Val Gln  
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gaagaaagca aggaggagac acacggatga cccaagcaag gaatgcttca ctctgaaatt 240  
tgacctgaat gtggacattg agacagagat cgtcccagcc atg aag aag aag tca 295  
Met Lys Lys Lys Ser  
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Leu Gly Glu Val Leu Leu Pro Val Phe Glu Arg Lys Gly Ile Ala Leu  
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ggc aaa gtg gac atc tac ctg gac cag tcc aac aca ccc ctg tcc ctc 391  
Gly Lys Val Asp Ile Tyr Leu Asp Gln Ser Asn Thr Pro Leu Ser Leu  
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acc ttc gag gcc tac agg ttc ggg gga cac tac ctt cgt gtc aaa gcc 439  
Thr Phe Glu Ala Tyr Arg Phe Gly Gly His Tyr Leu Arg Val Lys Ala  
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Pro Ala Lys Pro Gly Asp Glu Gly Lys Val Glu Gln Gly Met Lys Asp  
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tcc aag tcc ctg agt ttg ccg att ctg cgg cca gct ggg acc ggg ccc 535  
Ser Lys Ser Leu Ser Leu Pro Ile Leu Arg Pro Ala Gly Thr Gly Pro

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ccc gcc ctg gag cgt gtg gac gcc cag agc cgc cgg gag agc ctg gac	Pro Ala Leu Glu Arg Val Asp Ala Gln Ser Arg Arg Glu Ser Leu Asp	583		
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	105	110	115	
gag gcg agc atc ccc ggg cag gag ccc ccc acg ccc tcc agc tgc tct	Glu Ala Ser Ile Pro Gly Gln Glu Pro Pro Thr Pro Ser Ser Cys Ser	679		
	120	125	130	
ctg ccc agc ggc agc agt ggc agc acc aac act ggc gac agc tgg aag	Leu Pro Ser Gly Ser Ser Gly Ser Thr Asn Thr Gly Asp Ser Trp Lys	727		
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aac cgg gcg gcc agt cgc ttc agc ggc ttt ttc agc tcc ggc ccc agc	Asn Arg Ala Ala Ser Arg Phe Ser Gly Phe Phe Ser Ser Gly Pro Ser	775		
	150	155	160	165
acc agc gcc ttt ggc cgg gag gta gac aag atg gag cag ctg gag ggc	Thr Ser Ala Phe Gly Arg Glu Val Asp Lys Met Glu Gln Leu Glu Gly	823		
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tca ggg ctg ctg tgt gag gtg gag gcg gag cgc ctg ttc agc aac atc	Ser Gly Leu Leu Cys Glu Val Glu Ala Glu Arg Leu Phe Ser Asn Ile	1159		
	280	285	290	
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Pro	Val	Leu	Glu	Lys	Ala	Arg	Arg	Thr	Arg	Ala	Leu	Leu	Gln	Pro	Gly	
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gac	ttc	ctc	aaa	ggc	ttc	aag	atg	ttc	ggc	tcg	ctc	ttc	aag	ccc	tac	1303
Asp	Phe	Leu	Lys	Gly	Phe	Lys	Met	Phe	Gly	Ser	Leu	Phe	Lys	Pro	Tyr	
				330					335					340		
atc	cgc	tac	tgc	atg	gag	gag	gag	ggc	tgc	atg	gag	tac	atg	cgc	ggc	1351
Ile	Arg	Tyr	Cys	Met	Glu	Glu	Glu	Gly	Cys	Met	Glu	Tyr	Met	Arg	Gly	
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ctg	ctg	cgc	gac	aac	gac	ctc	ttc	cgg	gcc	tac	atc	acg	tgg	gcg	gag	1399
Leu	Leu	Arg	Asp	Asn	Asp	Leu	Phe	Arg	Ala	Tyr	Ile	Thr	Trp	Ala	Glu	
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Lys	His	Pro	Gln	Cys	Gln	Arg	Leu	Lys	Leu	Ser	Asp	Met	Leu	Ala	Lys	
	375					380					385					
ccc	cac	cag	cgg	ctc	acc	aag	tac	ccg	ctg	ctg	ctc	aag	tcg	gtg	ctg	1495
Pro	His	Gln	Arg	Leu	Thr	Lys	Tyr	Pro	Leu	Leu	Leu	Lys	Ser	Val	Leu	
390					395					400					405	
agg	aag	acc	gag	gag	ccg	cgc	gcc	aag	gag	gcc	gtc	gtc	gcc	atg	atc	1543
Arg	Lys	Thr	Glu	Glu	Pro	Arg	Ala	Lys	Glu	Ala	Val	Val	Ala	Met	Ile	
			410						415					420		
ggc	tcc	gtg	gag	cgc	ttc	atc	cac	cac	gtg	aac	gcg	tgc	atg	cgg	cag	1591
Gly	Ser	Val	Glu	Arg	Phe	Ile	His	His	Val	Asn	Ala	Cys	Met	Arg	Gln	
		425					430					435				
cgg	cag	gag	cgg	cag	cgg	ctg	gcg	gcc	gtg	gtg	agc	cgc	atc	gac	gcc	1639
Arg	Gln	Glu	Arg	Gln	Arg	Leu	Ala	Ala	Val	Val	Ser	Arg	Ile	Asp	Ala	
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tac	gag	gtg	gtg	gaa	agc	agc	agc	gac	gaa	gtg	gac	aag	ctc	ctg	aag	1687
Tyr	Glu	Val	Val	Glu	Ser	Ser	Ser	Asp	Glu	Val	Asp	Lys	Leu	Leu	Lys	
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gaa	ttt	ctg	cac	ctg	gac	ttg	aca	gcg	ccc	atc	cct	ggc	gcc	tcc	ccg	1735
Glu	Phe	Leu	His	Leu	Asp	Leu	Thr	Ala	Pro	Ile	Pro	Gly	Ala	Ser	Pro	
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Glu	Glu	Thr	Arg	Gln	Leu	Leu	Leu	Glu	Gly	Ser	Leu	Arg	Met	Lys	Glu	
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ggg	aag	gac	agc	aag	atg	gat	gtg	tac	tgc	ttc	ctc	ttc	acg	gat	ctg	1831
Gly	Lys	Asp	Ser	Lys	Met	Asp	Val	Tyr	Cys	Phe	Leu	Phe	Thr	Asp	Leu	
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Pro Gly Ser Phe Leu Leu Ile Tyr Leu Asn Glu Phe His Ser Ala Val	
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Val Asp Thr Ile Tyr Asn Ala Gln Asn Gln Leu Gln Gln Leu Arg Ala	
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Gln Glu Pro Pro Gly Ser Gln Gln Pro Leu Gln Ser Leu Glu Glu Glu	
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gag gat gag cag gag gag gaa gag gag gag gag gag gag gag gaa	2167
Glu Asp Glu Gln Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu	
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Gly Glu Asp Ser Gly Thr Ser Ala Ala Ser Ser Pro Thr Ile Met Arg	
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Lys Ser Ser Gly Ser Pro Asp Ser Gln His Cys Ala Ser Asp Gly Ser	
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Thr Glu Thr Leu Ala Met Val Val Val Glu Pro Gly Asp Thr Leu Ser	
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Ser Pro Glu Phe Asp Ser Gly Pro Phe Ser Ser Gln Ser Asp Glu Thr	
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Ser Leu Ser Thr Thr Ala Ser Ser Ala Thr Pro Thr Ser Glu Leu Leu	
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ccc ctg ggt ccg gtg gac ggc cgc tcc tgc tcc atg gac tct gcc tac	2455
Pro Leu Gly Pro Val Asp Gly Arg Ser Cys Ser Met Asp Ser Ala Tyr	
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Gly Thr Leu Ser Pro Thr Ser Leu Gln Asp Phe Val Ala Pro Gly Pro	
730 735 740	
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Met Ala Glu Leu Val Pro Arg Ala Pro Glu Ser Pro Arg Val Pro Ser	
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Pro Pro Pro Ser Pro Arg Leu Arg Arg Arg Thr Pro Val Gln Leu Leu
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Ser Cys Pro Pro His Leu Leu Lys Ser Lys Ser Glu Ala Ser Leu Leu
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cag ctg ctg gca ggg gct ggc acc cat ggg aca ccc tct gcc ccc agc 2695
Gln Leu Leu Ala Gly Ala Gly Thr His Gly Thr Pro Ser Ala Pro Ser
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cgc agc ctg tca gag ctc tgc ctg gct gtt cca gcc cca ggt att agg 2743
Arg Ser Leu Ser Glu Leu Cys Leu Ala Val Pro Ala Pro Gly Ile Arg
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act cag gcc tcc cct cag gaa gct ggg ccc agc tgg gat tgc cga ggg 2791
Thr Gln Gly Ser Pro Gln Glu Ala Gly Pro Ser Trp Asp Cys Arg Gly
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gcc cct agc cct ggc agc ggt cct ggg cta gtc ggc tgc ctg gcc ggg 2839
Ala Pro Ser Pro Gly Ser Gly Pro Gly Leu Val Gly Cys Leu Ala Gly
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gaa cct gca ggc tcc cac agg aag agg tgt gga gac ctg ccc tcg ggg 2887
Glu Pro Ala Gly Ser His Arg Lys Arg Cys Gly Asp Leu Pro Ser Gly
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Ala Ser Pro Arg Val Gln Pro Glu Pro Pro Pro Gly Val Ser Ala Gln
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cac agg aag ctg acc ctg gcc cag ctc tac cga atc agg acc acc ctg 2983
His Arg Lys Leu Thr Leu Ala Gln Leu Tyr Arg Ile Arg Thr Thr Leu
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ctg ctt aac tcc acg ctc act gcc tcg gag gtc tgagcagagg gagggcccca 3036
Leu Leu Asn Ser Thr Leu Thr Ala Ser Glu Val
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Thr Pro Leu Ser Leu Thr Phe Glu Ala Tyr Arg Phe Gly Gly His Tyr
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Leu Arg Val Lys Ala Pro Ala Lys Pro Gly Asp Glu Gly Lys Val Glu
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Gln Gly Met Lys Asp Ser Lys Ser Leu Ser Leu Pro Ile Leu Arg Pro
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Ala Gly Thr Gly Pro Pro Ala Leu Glu Arg Val Asp Ala Gln Ser Arg
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Arg Glu Ser Leu Asp Ile Leu Ala Pro Gly Arg Arg Arg Lys Asn Met
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Ser Glu Phe Leu Gly Glu Ala Ser Ile Pro Gly Gln Glu Pro Pro Thr
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Pro Ser Ser Cys Ser Leu Pro Ser Gly Ser Ser Gly Ser Thr Asn Thr
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Gly Asp Ser Trp Lys Asn Arg Ala Ala Ser Arg Phe Ser Gly Phe Phe
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Ser Ser Gly Pro Ser Thr Ser Ala Phe Gly Arg Glu Val Asp Lys Met
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Glu Gln Leu Glu Gly Lys Leu His Thr Tyr Ser Leu Phe Gly Leu Pro
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Arg Leu Pro Arg Gly Leu Arg Phe Asp His Asp Ser Trp Glu Glu Glu
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Tyr Asp Glu Asp Glu Asp Glu Asp Asn Ala Cys Leu Arg Leu Glu Asp
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Ser Trp Arg Glu Leu Ile Asp Gly His Glu Lys Leu Thr Arg Arg Gln
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Cys His Gln Gln Glu Ala Val Trp Glu Leu Leu His Thr Glu Ala Ser
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Tyr Ile Arg Lys Leu Arg Val Ile Ile Asn Leu Phe Leu Cys Cys Leu
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Leu Asn Leu Gln Glu Ser Gly Leu Leu Cys Glu Val Glu Ala Glu Arg
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 325 330 335  
 Leu Phe Lys Pro Tyr Ile Arg Tyr Cys Met Glu Glu Glu Gly Cys Met  
 340 345 350  
 Glu Tyr Met Arg Gly Leu Leu Arg Asp Asn Asp Leu Phe Arg Ala Tyr  
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 Ile Thr Trp Ala Glu Lys His Pro Gln Cys Gln Arg Leu Lys Leu Ser  
 370 375 380  
 Asp Met Leu Ala Lys Pro His Gln Arg Leu Thr Lys Tyr Pro Leu Leu  
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 Val Val Ala Met Ile Gly Ser Val Glu Arg Phe Ile His His Val Asn  
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 Ala Cys Met Arg Gln Arg Gln Glu Arg Gln Arg Leu Ala Ala Val Val  
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 Pro Gly Ala Ser Pro Glu Glu Thr Arg Gln Leu Leu Leu Glu Gly Ser  
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Gln Gln Leu Arg Ala Gln Glu Pro Pro Gly Ser Gln Gln Pro Leu Gln  
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Ser Leu Glu Glu Glu Glu Asp Glu Gln Glu Glu Glu Glu Glu Glu  
610 615 620

Glu Glu Glu Glu Glu Gly Glu Asp Ser Gly Thr Ser Ala Ala Ser Ser  
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Pro Thr Ile Met Arg Lys Ser Ser Gly Ser Pro Asp Ser Gln His Cys  
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Ala Ser Asp Gly Ser Thr Glu Thr Leu Ala Met Val Val Val Glu Pro  
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Gly Asp Thr Leu Ser Ser Pro Glu Phe Asp Ser Gly Pro Phe Ser Ser  
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Gln Ser Asp Glu Thr Ser Leu Ser Thr Thr Ala Ser Ser Ala Thr Pro  
690 695 700

Thr Ser Glu Leu Leu Pro Leu Gly Pro Val Asp Gly Arg Ser Cys Ser  
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Met Asp Ser Ala Tyr Gly Thr Leu Ser Pro Thr Ser Leu Gln Asp Phe  
725 730 735

Val Ala Pro Gly Pro Met Ala Glu Leu Val Pro Arg Ala Pro Glu Ser  
740 745 750

Pro Arg Val Pro Ser Pro Pro Pro Ser Pro Arg Leu Arg Arg Arg Thr  
755 760 765

Pro Val Gln Leu Leu Ser Cys Pro Pro His Leu Leu Lys Ser Lys Ser  
770 775 780

Glu Ala Ser Leu Leu Gln Leu Leu Ala Gly Ala Gly Thr His Gly Thr  
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Pro Ser Ala Pro Ser Arg Ser Leu Ser Glu Leu Cys Leu Ala Val Pro  
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Ala Pro Gly Ile Arg Thr Gln Gly Ser Pro Gln Glu Ala Gly Pro Ser  
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Trp Asp Cys Arg Gly Ala Pro Ser Pro Gly Ser Gly Pro Gly Leu Val  
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Gly Cys Leu Ala Gly Glu Pro Ala Gly Ser His Arg Lys Arg Cys Gly  
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Asp Leu Pro Ser Gly Ala Ser Pro Arg Val Gln Pro Glu Pro Pro Pro  
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Thr Arg Ser Cys Pro Pro Arg Thr Ser Pro Ala Val Asp Leu Glu Glu  
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Glu Glu Glu Glu Ser Ser Val Asp Gly Lys Gly Asp Arg Lys Ser Thr  
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Gly Leu Lys Leu Ser Lys Lys Lys Ala Arg Arg Arg His Thr Asp Asp  
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Pro Ser Lys Glu Cys Phe Thr Leu Lys Phe Asp Leu Asn Val Asp Ile  
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Ile Tyr Leu Asp Gln Ser Asn Thr Pro Leu Ser Leu Thr Phe Glu Ala  
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tac agg ttc ggg gga cac tac ctt cgt gtc aaa gcc cca gcc aag cct 604  
Tyr Arg Phe Gly Gly His Tyr Leu Arg Val Lys Ala Pro Ala Lys Pro

140										145										150										
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Gly	Asp	Glu	Gly	Lys	Val	Glu	Gln	Gly	Met	Lys	Asp	Ser	Lys	Ser	Leu															
155				160				165																						
agt	ttg	ccg	att	ctg	cgg	cca	gct	ggg	acc	ggg	ccc	ccc	gcc	ctg	gag	700														
Ser	Leu	Pro	Ile	Leu	Arg	Pro	Ala	Gly	Thr	Gly	Pro	Pro	Ala	Leu	Glu															
170				175				180																						
cgt	gtg	gac	gcc	cag	agc	cgc	cgg	gag	agc	ctg	gac	atc	ttg	gcc	cct	748														
Arg	Val	Asp	Ala	Gln	Ser	Arg	Arg	Glu	Ser	Leu	Asp	Ile	Leu	Ala	Pro															
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ggc	cgc	cgc	cgc	aag	aac	atg	tgc	gag	ttc	ctg	ggg	gag	gcg	agc	atc	796														
Gly	Arg	Arg	Arg	Lys	Asn	Met	Ser	Glu	Phe	Gly	Glu	Glu	Ala	Ser	Ile															
200				205				210				215																		
ccc	ggg	cag	gag	ccc	ccc	acg	ccc	tcc	agc	tgc	tct	ctg	ccc	agc	ggc	844														
Pro	Gly	Gln	Glu	Pro	Pro	Thr	Pro	Ser	Ser	Cys	Ser	Leu	Pro	Ser	Gly															
220				225				230																						
agc	agt	ggc	agc	acc	aac	act	ggc	gac	agc	tgg	aag	aac	cgg	gcg	gcc	892														
Ser	Ser	Gly	Ser	Thr	Asn	Thr	Gly	Asp	Ser	Trp	Lys	Asn	Arg	Ala	Ala															
235				240				245																						
agt	cgc	ttc	agc	ggc	ttt	ttc	agc	tcc	ggc	ccc	agc	acc	agc	gcc	ttt	940														
Ser	Arg	Phe	Ser	Gly	Phe	Phe	Ser	Ser	Gly	Pro	Ser	Thr	Ser	Ala	Phe															
250				255				260																						
ggc	cgg	gag	gta	gac	aag	atg	gag	cag	ctg	gag	ggc	aag	ctg	cac	acc	988														
Gly	Arg	Glu	Val	Asp	Lys	Met	Glu	Gln	Leu	Glu	Gly	Lys	Leu	His	Thr															
265				270				275																						
tac	agc	ctc	ttc	ggg	ctg	ccc	agg	ctg	ccc	cgg	ggg	ctg	cgc	ttc	gac	1036														
Tyr	Ser	Leu	Phe	Gly	Leu	Pro	Arg	Leu	Pro	Arg	Gly	Leu	Arg	Phe	Asp															
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cat	gac	tcc	tgg	gag	gag	gag	tac	gat	gaa	gac	gag	gat	gag	gac	aat	1084														
His	Asp	Ser	Trp	Glu	Glu	Glu	Tyr	Asp	Glu	Asp	Glu	Asp	Glu	Asp	Asn															
300				305				310																						
gcc	tgc	ctg	agg	ctg	gag	gac	agc	tgg	cgg	gag	ctc	att	gat	ggg	cat	1132														
Ala	Cys	Leu	Arg	Leu	Glu	Asp	Ser	Trp	Arg	Glu	Leu	Ile	Asp	Gly	His															
315				320				325																						
gag	aag	ctg	acc	cgg	cgg	cag	tgc	cac	cag	cag	gag	gcg	gtg	tgg	gag	1180														
Glu	Lys	Leu	Thr	Arg	Arg	Gln	Cys	His	Gln	Gln	Glu	Ala	Val	Trp	Glu															
330				335				340																						
ctg	ctg	cac	acg	gag	gcc	tcc	tac	atc	agg	aaa	ctg	cgg	gtg	atc	atc	1228														
Leu	Leu	His	Thr	Glu	Ala	Ser	Tyr	Ile	Arg	Lys	Leu	Arg	Val	Ile	Ile															
345				350				355																						
aac	ctg	ttc	ctg	tgc	tgc	ctc	ctg	aac	ctg	caa	gag	tca	ggg	ctg	ctg	1276														
Asn	Leu	Phe	Leu	Cys	Cys	Leu	Leu	Asn	Leu	Gln	Glu	Ser	Gly	Leu	Leu															
360				365				370				375																		



tgt gag gtg gag gcg gag cgc ctg ttc agc aac atc ccg gag atc gcg	1324
Cys Glu Val Glu Ala Glu Arg Leu Phe Ser Asn Ile Pro Glu Ile Ala	
380 385 390	
cag ctg cac cgc agg ctg tgg gct agc gtg atg gcg ccg gtg ctg gag	1372
Gln Leu His Arg Arg Leu Trp Ala Ser Val Met Ala Pro Val Leu Glu	
395 400 405	
aag gcg cgg cgc acg cga gcg ctg cta cag ccc ggg gac ttc ctc aaa	1420
Lys Ala Arg Arg Thr Arg Ala Leu Leu Gln Pro Gly Asp Phe Leu Lys	
410 415 420	
ggc ttc aag atg ttc ggc tcg ctc ttc aag ccc tac atc cgc tac tgc	1468
Gly Phe Lys Met Phe Gly Ser Leu Phe Lys Pro Tyr Ile Arg Tyr Cys	
425 430 435	
atg gag gag gag ggc tgc atg gag tac atg cgc ggc ctg ctg cgc gac	1516
Met Glu Glu Glu Gly Cys Met Glu Tyr Met Arg Gly Leu Leu Arg Asp	
440 445 450 455	
aac gac ctc ttc cgg gcc tac atc acg tgg gcg gag aag cac cca cag	1564
Asn Asp Leu Phe Arg Ala Tyr Ile Thr Trp Ala Glu Lys His Pro Gln	
460 465 470	
tgc cag agg ctg aag ctg agc gac atg ctg gcc aaa ccc cac cag cgg	1612
Cys Gln Arg Leu Lys Leu Ser Asp Met Leu Ala Lys Pro His Gln Arg	
475 480 485	
ctc acc aag tac ccg ctg ctg ctc aag tcg gtg ctg agg aag acc gag	1660
Leu Thr Lys Tyr Pro Leu Leu Leu Lys Ser Val Leu Arg Lys Thr Glu	
490 495 500	
gag ccg cgc gcc aag gag gcc gtc gtc gcc atg atc ggc tcc gtg gag	1708
Glu Pro Arg Ala Lys Glu Ala Val Val Ala Met Ile Gly Ser Val Glu	
505 510 515	
cgc ttc atc cac cac gtg aac gcg tgc atg cgg cag cgg cag gag cgg	1756
Arg Phe Ile His His Val Asn Ala Cys Met Arg Gln Arg Gln Glu Arg	
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Gln Arg Leu Ala Ala Val Val Ser Arg Ile Asp Ala Tyr Glu Val Val	
540 545 550	
gaa agc agc agc gac gaa gtg gac aag ctc ctg aag gaa ttt ctg cac	1852
Glu Ser Ser Ser Asp Glu Val Asp Lys Leu Leu Lys Glu Phe Leu His	
555 560 565	
ctg gac ttg aca gcg ccc atc cct ggc gcc tcc ccg gag gag acg cgg	1900
Leu Asp Leu Thr Ala Pro Ile Pro Gly Ala Ser Pro Glu Glu Thr Arg	
570 575 580	
cag ctg ctg ctg gag ggg agc ctg agg atg aag gag ggg aag gac agc	1948
Gln Leu Leu Leu Glu Gly Ser Leu Arg Met Lys Glu Gly Lys Asp Ser	
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Lys Met Asp Val Tyr Cys Phe Leu Phe Thr Asp Leu Leu Leu Val Thr	
600 605 610 615	
aaa gca gtg aag aag gca gag agg acc agg gtc atc agg cca ccc ctg	2044
Lys Ala Val Lys Lys Ala Glu Arg Thr Arg Val Ile Arg Pro Pro Leu	
620 625 630	
ctc gtg gac aag att gtg tgc cgg gag cta cgg gac cct ggg tcc ttc	2092
Leu Val Asp Lys Ile Val Cys Arg Glu Leu Arg Asp Pro Gly Ser Phe	
635 640 645	
ctc ctt atc tac ctg aat gag ttt cac agt gct gta ggg gcc tac acg	2140
Leu Leu Ile Tyr Leu Asn Glu Phe His Ser Ala Val Gly Ala Tyr Thr	
650 655 660	
ttc cag gcc agt ggc cag gcc ttg tgc cgt ggc tgg gtg gac acc att	2188
Phe Gln Ala Ser Gly Gln Ala Leu Cys Arg Gly Trp Val Asp Thr Ile	
665 670 675	
tac aat gcc cag aac cag ctg caa cag ctg cgt gca cag gag ccc cca	2236
Tyr Asn Ala Gln Asn Gln Leu Gln Gln Leu Arg Ala Gln Glu Pro Pro	
680 685 690 695	
ggc agt cag cag ccc ctg cag agc ctg gaa gag gag gag gat gag cag	2284
Gly Ser Gln Gln Pro Leu Gln Ser Leu Glu Glu Glu Glu Asp Glu Gln	
700 705 710	
gag gag gaa gag gag gag gag gag gag gag gag gaa ggc gag gac agt	2332
Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Gly Glu Asp Ser	
715 720 725	
ggc act tca gct gcc agc tcc cct acc atc atg cgg aaa agc agc ggc	2380
Gly Thr Ser Ala Ala Ser Ser Pro Thr Ile Met Arg Lys Ser Ser Gly	
730 735 740	
agc ccc gac tct cag cac tgt gcc tca gat ggc tcc acg gag acc ctg	2428
Ser Pro Asp Ser Gln His Cys Ala Ser Asp Gly Ser Thr Glu Thr Leu	
745 750 755	
gcc atg gtt gtg gta gag cct ggg gac acg ctg tcc tcc ccc gag ttc	2476
Ala Met Val Val Val Glu Pro Gly Asp Thr Leu Ser Ser Pro Glu Phe	
760 765 770 775	
gac agc ggt cct ttc agc tcc cag tct gat gag acc tct ctc agc acc	2524
Asp Ser Gly Pro Phe Ser Ser Gln Ser Asp Glu Thr Ser Leu Ser Thr	
780 785 790	
act gcc tca tct gcc acg ccc acc agt gag ctg ctg ccc ctg ggt ccg	2572
Thr Ala Ser Ser Ala Thr Pro Thr Ser Glu Leu Leu Pro Leu Gly Pro	
795 800 805	
gtg gac ggc cgc tcc tgc tcc atg gac tct gcc tac ggc acc ctc tcc	2620
Val Asp Gly Arg Ser Cys Ser Met Asp Ser Ala Tyr Gly Thr Leu Ser	
810 815 820	
cca acc tcc tta caa gac ttt gtg gcc cca ggc cca atg gca gag cta	2668

Pro	Thr	Ser	Leu	Gln	Asp	Phe	Val	Ala	Pro	Gly	Pro	Met	Ala	Glu	Leu		
825						830					835						
gtg	cct	cgg	gcc	cca	gag	tcc	cca	cga	gtt	cct	tcc	cct	cca	ccc	tcg	2716	
Val	Pro	Arg	Ala	Pro	Glu	Ser	Pro	Arg	Val	Pro	Ser	Pro	Pro	Pro	Ser		
840					845					850					855		
ccc	cgt	ctc	cgc	cgc	cgc	acc	cct	gtc	cag	ctg	ttg	agc	tgc	ccg	ccc	2764	
Pro	Arg	Leu	Arg	Arg	Arg	Thr	Pro	Val	Gln	Leu	Leu	Ser	Cys	Pro	Pro		
				860					865						870		
cac	ctg	ctc	aag	tct	aag	tcc	gag	gcc	agc	ctc	ctc	cag	ctg	ctg	gca	2812	
His	Leu	Leu	Lys	Ser	Lys	Ser	Glu	Ala	Ser	Leu	Leu	Gln	Leu	Leu	Ala		
			875					880							885		
ggg	gct	ggc	acc	cat	ggg	aca	ccc	tct	gcc	ccc	agc	cgc	agc	ctg	tca	2860	
Gly	Ala	Gly	Thr	His	Gly	Thr	Pro	Ser	Ala	Pro	Ser	Arg	Ser	Leu	Ser		
		890					895						900				
gag	ctc	tgc	ctg	gct	gtt	cca	gcc	cca	ggt	att	agg	act	cag	ggc	tcc	2908	
Glu	Leu	Cys	Leu	Ala	Val	Pro	Ala	Pro	Gly	Ile	Arg	Thr	Gln	Gly	Ser		
		905				910											
cct	cag	gaa	gct	ggg	ccc	agc	tgg	gat	tgc	cga	ggg	gcc	cct	agc	cct	2956	
Pro	Gln	Glu	Ala	Gly	Pro	Ser	Trp	Asp	Cys	Arg	Gly	Ala	Pro	Ser	Pro		
920					925					930					935		
ggc	agc	ggt	cct	ggg	cta	gtc	ggc	tgc	ctg	gcc	ggg	gaa	cct	gca	ggc	3004	
Gly	Ser	Gly	Pro	Gly	Leu	Val	Gly	Cys	Leu	Ala	Gly	Glu	Pro	Ala	Gly		
				940					945						950		
tcc	cac	agg	aag	agg	tgt	gga	gac	ctg	ccc	tcg	ggg	gcc	tct	ccc	agg	3052	
Ser	His	Arg	Lys	Arg	Cys	Gly	Asp	Leu	Pro	Ser	Gly	Ala	Ser	Pro	Arg		
			955					960						965			
gtc	cag	cct	gag	ccc	cca	cca	ggg	gtc	tct	gcc	cag	cac	agg	aag	ctg	3100	
Val	Gln	Pro	Glu	Pro	Pro	Pro	Gly	Val	Ser	Ala	Gln	His	Arg	Lys	Leu		
		970					975								980		
acc	ctg	gcc	cag	ctc	tac	cga	atc	agg	acc	acc	ctg	ctg	ctt	aac	tcc	3148	
Thr	Leu	Ala	Gln	Leu	Tyr	Arg	Ile	Arg	Thr	Thr	Leu	Leu	Leu	Asn	Ser		
		985				990					995						
acg	ctc	act	gcc	tcg	gag	gtc	tgagcagagg	gaggccccca	agagtgccat							3199	
Thr	Leu	Thr	Ala	Ser	Glu	Val											
1000					1005												
tgaccaagag	acagcagaca	gcctgcctcc	tggggcgtgc	cggcacctgc	ttcagctact											3259	
gcctcctgta	tgcatgagcc	ggatgctggg	caggatccct	gcctacgcc	gggcccatt											3319	
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tgccctgccc ccaccttccc agtccacacag gccacccctg gcttgggctg ggttctgtga 3559  
 agttacgtat ttattgagct tttggttctt ttataaagac ttgtctagac 3609

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 35 40 45  
 Lys Gly Asp Arg Lys Ser Thr Gly Leu Lys Leu Ser Lys Lys Lys Ala  
 50 55 60  
 Arg Arg Arg His Thr Asp Asp Pro Ser Lys Glu Cys Phe Thr Leu Lys  
 65 70 75 80  
 Phe Asp Leu Asn Val Asp Ile Glu Thr Glu Ile Val Pro Ala Met Lys  
 85 90 95  
 Lys Lys Ser Leu Gly Glu Val Leu Leu Pro Val Phe Glu Arg Lys Gly  
 100 105 110  
 Ile Ala Leu Gly Lys Val Asp Ile Tyr Leu Asp Gln Ser Asn Thr Pro  
 115 120 125  
 Leu Ser Leu Thr Phe Glu Ala Tyr Arg Phe Gly Gly His Tyr Leu Arg  
 130 135 140  
 Val Lys Ala Pro Ala Lys Pro Gly Asp Glu Gly Lys Val Glu Gln Gly  
 145 150 155 160  
 Met Lys Asp Ser Lys Ser Leu Ser Leu Pro Ile Leu Arg Pro Ala Gly  
 165 170 175  
 Thr Gly Pro Pro Ala Leu Glu Arg Val Asp Ala Gln Ser Arg Arg Glu  
 180 185 190  
 Ser Leu Asp Ile Leu Ala Pro Gly Arg Arg Arg Lys Asn Met Ser Glu  
 195 200 205  
 Phe Leu Gly Glu Ala Ser Ile Pro Gly Gln Glu Pro Pro Thr Pro Ser  
 210 215 220  
 Ser Cys Ser Leu Pro Ser Gly Ser Ser Gly Ser Thr Asn Thr Gly Asp  
 225 230 235 240  
 Ser Trp Lys Asn Arg Ala Ala Ser Arg Phe Ser Gly Phe Phe Ser Ser

	245		250		255
Gly Pro Ser Thr Ser Ala Phe Gly Arg Glu Val Asp Lys Met Glu Gln	260	265	270		
Leu Glu Gly Lys Leu His Thr Tyr Ser Leu Phe Gly Leu Pro Arg Leu	275	280	285		
Pro Arg Gly Leu Arg Phe Asp His Asp Ser Trp Glu Glu Glu Tyr Asp	290	295	300		
Glu Asp Glu Asp Glu Asp Asn Ala Cys Leu Arg Leu Glu Asp Ser Trp	305	310	315	320	
Arg Glu Leu Ile Asp Gly His Glu Lys Leu Thr Arg Arg Gln Cys His	325	330	335		
Gln Gln Glu Ala Val Trp Glu Leu Leu His Thr Glu Ala Ser Tyr Ile	340	345	350		
Arg Lys Leu Arg Val Ile Ile Asn Leu Phe Leu Cys Cys Leu Leu Asn	355	360	365		
Leu Gln Glu Ser Gly Leu Leu Cys Glu Val Glu Ala Glu Arg Leu Phe	370	375	380		
Ser Asn Ile Pro Glu Ile Ala Gln Leu His Arg Arg Leu Trp Ala Ser	385	390	395	400	
Val Met Ala Pro Val Leu Glu Lys Ala Arg Arg Thr Arg Ala Leu Leu	405	410	415		
Gln Pro Gly Asp Phe Leu Lys Gly Phe Lys Met Phe Gly Ser Leu Phe	420	425	430		
Lys Pro Tyr Ile Arg Tyr Cys Met Glu Glu Glu Gly Cys Met Glu Tyr	435	440	445		
Met Arg Gly Leu Leu Arg Asp Asn Asp Leu Phe Arg Ala Tyr Ile Thr	450	455	460		
Trp Ala Glu Lys His Pro Gln Cys Gln Arg Leu Lys Leu Ser Asp Met	465	470	475	480	
Leu Ala Lys Pro His Gln Arg Leu Thr Lys Tyr Pro Leu Leu Leu Lys	485	490	495		
Ser Val Leu Arg Lys Thr Glu Glu Pro Arg Ala Lys Glu Ala Val Val	500	505	510		
Ala Met Ile Gly Ser Val Glu Arg Phe Ile His His Val Asn Ala Cys	515	520	525		
Met Arg Gln Arg Gln Glu Arg Gln Arg Leu Ala Ala Val Val Ser Arg	530	535	540		
Ile Asp Ala Tyr Glu Val Val Glu Ser Ser Ser Asp Glu Val Asp Lys					

545		550		555		560
Leu Leu Lys Glu Phe	Leu His Leu Asp	Leu Thr Ala Pro	Ile Pro Gly			
	565		570			575
Ala Ser Pro Glu Thr Arg	Gln Leu Leu Glu Gly	Ser Leu Arg				
	580		585			590
Met Lys Glu Gly Lys Asp	Ser Lys Met Asp	Val Tyr Cys Phe	Leu Phe			
	595		600			605
Thr Asp Leu Leu Leu Val	Thr Lys Ala Val	Lys Lys Ala Glu Arg	Thr			
	610		615			620
Arg Val Ile Arg Pro	Pro Leu Leu Val Asp	Lys Ile Val Cys Arg	Glu			
	625		630			635
Leu Arg Asp Pro Gly Ser	Phe Leu Leu Ile Tyr	Leu Asn Glu Phe	His			
	645		650			655
Ser Ala Val Gly Ala Tyr	Thr Phe Gln Ala Ser	Gly Gln Ala Leu Cys				
	660		665			670
Arg Gly Trp Val Asp Thr	Ile Tyr Asn Ala Gln	Asn Gln Leu Gln Gln				
	675		680			685
Leu Arg Ala Gln Glu Pro	Pro Gly Ser Gln Gln	Pro Leu Gln Ser Leu				
	690		695			700
Glu Glu Glu Glu Asp	Glu Gln Glu Glu Glu	Glu Glu Glu Glu Glu	Glu			
	705		710			715
Glu Glu Glu Gly Glu Asp	Ser Gly Thr Ser Ala	Ala Ser Ser Pro Thr				
	725		730			735
Ile Met Arg Lys Ser Ser	Gly Ser Pro Asp Ser	Gln His Cys Ala Ser				
	740		745			750
Asp Gly Ser Thr Glu Thr	Leu Ala Met Val Val	Val Glu Pro Gly Asp				
	755		760			765
Thr Leu Ser Ser Pro Glu	Phe Asp Ser Gly Pro	Phe Ser Ser Gln Ser				
	770		775			780
Asp Glu Thr Ser Leu Ser	Thr Thr Ala Ser Ser	Ala Thr Pro Thr Ser				
	785		790			795
Glu Leu Leu Pro Leu Gly	Pro Val Asp Gly Arg	Ser Cys Ser Met Asp				
	805		810			815
Ser Ala Tyr Gly Thr Leu	Ser Pro Thr Ser Leu	Gln Asp Phe Val Ala				
	820		825			830
Pro Gly Pro Met Ala Glu	Leu Val Pro Arg Ala	Pro Glu Ser Pro Arg				
	835		840			845
Val Pro Ser Pro Pro Pro	Ser Pro Arg Leu Arg	Arg Arg Thr Pro Val				

850	855	860
Gln Leu Leu Ser Cys Pro Pro His Leu Leu Lys Ser Lys Ser Glu Ala		
865	870	875 880
Ser Leu Leu Gln Leu Leu Ala Gly Ala Gly Thr His Gly Thr Pro Ser		
	885	890 895
Ala Pro Ser Arg Ser Leu Ser Glu Leu Cys Leu Ala Val Pro Ala Pro		
	900	905 910
Gly Ile Arg Thr Gln Gly Ser Pro Gln Glu Ala Gly Pro Ser Trp Asp		
	915	920 925
Cys Arg Gly Ala Pro Ser Pro Gly Ser Gly Pro Gly Leu Val Gly Cys		
	930	935 940
Leu Ala Gly Glu Pro Ala Gly Ser His Arg Lys Arg Cys Gly Asp Leu		
	945	950 955 960
Pro Ser Gly Ala Ser Pro Arg Val Gln Pro Glu Pro Pro Pro Gly Val		
	965	970 975
Ser Ala Gln His Arg Lys Leu Thr Leu Ala Gln Leu Tyr Arg Ile Arg		
	980	985 990
Thr Thr Leu Leu Leu Asn Ser Thr Leu Thr Ala Ser Glu Val		
	995	1000 1005

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 Met Gly Trp Lys Pro Ser Glu  
 1 5  
 gct aga ggc cag tcc caa agt ctc cag gca tca ggg ctg cag ccc agg 161  
 Ala Arg Gly Gln Ser Gln Ser Leu Gln Ala Ser Gly Leu Gln Pro Arg  
 10 15 20  
 agc ctc aag gcg gcc cgg cgg gcg act gga cgg ccg gac agg tcc cga 209  
 Ser Leu Lys Ala Ala Arg Arg Ala Thr Gly Arg Pro Asp Arg Ser Arg  
 25 30 35  
 gca gcc ccg ccc aac atg gac cca gac ccc cag gcg ggc gtg cag gtg 257  
 Ala Ala Pro Pro Asn Met Asp Pro Asp Pro Gln Ala Gly Val Gln Val

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ggc atg cgg gtg gtg cgc ggc gtg gac tgg aag tgg ggc cag cag gac				305
Gly Met Arg Val Val Arg Gly Val Asp Trp Lys Trp Gly Gln Gln Asp	60	65	70	
ggc ggc gag ggc ggc gtg ggc acg gtg gtg gag ctt ggc cgc cac ggc				353
Gly Gly Glu Gly Gly Val Gly Thr Val Val Glu Leu Gly Arg His Gly	75	80	85	
agc ccc tcc aca ccc gac cgc aca gtg gtc gtg cag tgg gac cag ggc				401
Ser Pro Ser Thr Pro Asp Arg Thr Val Val Val Gln Trp Asp Gln Gly	90	95	100	
acg cgc acc aac tac cgc gcc ggc tac cag ggc gcg cac gac ctg ctg				449
Thr Arg Thr Asn Tyr Arg Ala Gly Tyr Gln Gly Ala His Asp Leu Leu	105	110	115	
ctg tac gac aac gcc cag atc ggc gtc cgg cac ccc aac atc atc tgt				497
Leu Tyr Asp Asn Ala Gln Ile Gly Val Arg His Pro Asn Ile Ile Cys	120	125	130	135
gac tgc tgc aag aag cac ggc ctg cgg ggc atg cgc tgg aag tgc cgt				545
Asp Cys Cys Lys Lys His Gly Leu Arg Gly Met Arg Trp Lys Cys Arg	140	145	150	
gtg tgc ctg gac tac gac ctc tgc acg cag tgc tac atg cac aac aag				593
Val Cys Leu Asp Tyr Asp Leu Cys Thr Gln Cys Tyr Met His Asn Lys	155	160	165	
cat gag ctc gcc cac gcc ttc gac cgc tac gag acc gct cac tcc cgc				641
His Glu Leu Ala His Ala Phe Asp Arg Tyr Glu Thr Ala His Ser Arg	170	175	180	
cct gtc aca ctg agt ccc cgc cag ggc ctc ccg agg atc cca cta agg				689
Pro Val Thr Leu Ser Pro Arg Gln Gly Leu Pro Arg Ile Pro Leu Arg	185	190	195	
ggc atc ttc cag gga gcg aag gtg gtg cga ggc ccc ttc tgg gag tgg				737
Gly Ile Phe Gln Gly Ala Lys Val Val Arg Gly Pro Phe Trp Glu Trp	200	205	210	215
ggc tca cag gat gga ggc gaa ggc aaa ccg ggc cgt gtg gtg gac atc				785
Gly Ser Gln Asp Gly Gly Glu Gly Lys Pro Gly Arg Val Val Asp Ile	220	225	230	
cgt ggc tgg gat gtg gag aca ggc cgg agt gtg gcc agc gtg acg tgg				833
Arg Gly Trp Asp Val Glu Thr Gly Arg Ser Val Ala Ser Val Thr Trp	235	240	245	
gct gat ggt acc acc aat gtg tac cgt gtg ggc cac aag ggc aag gtg				881
Ala Asp Gly Thr Thr Asn Val Tyr Arg Val Gly His Lys Gly Lys Val	250	255	260	
gac ctc aag tgt gtg ggc gag gca gcg ggc ggc ttc tac tac aag gac				929
Asp Leu Lys Cys Val Gly Glu Ala Ala Gly Gly Phe Tyr Tyr Lys Asp	265	270	275	



cac ctc cca agg ctc ggc aag ccg gcg gag ctg cag cgc agg gtg agt	977
His Leu Pro Arg Leu Gly Lys Pro Ala Glu Leu Gln Arg Arg Val Ser	
280 285 290 295	
gct gac agc cag ccc ttc cag cac ggg gac aag gtc aag tgt ctg ctg	1025
Ala Asp Ser Gln Pro Phe Gln His Gly Asp Lys Val Lys Cys Leu Leu	
300 305 310	
gac act gat gtc ctg cgg gag atg cag gaa ggc cac ggc ggc tgg aac	1073
Asp Thr Asp Val Leu Arg Glu Met Gln Glu Gly His Gly Gly Trp Asn	
315 320 325	
ccc agg atg gcg gag ttt atc gga cag acg ggc acc gtg cat cgt atc	1121
Pro Arg Met Ala Glu Phe Ile Gly Gln Thr Gly Thr Val His Arg Ile	
330 335 340	
acg gac cgc ggg gac gtg cgc gtg cag ttc aac cac gag acg cgc tgg	1169
Thr Asp Arg Gly Asp Val Arg Val Gln Phe Asn His Glu Thr Arg Trp	
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 Tyr Glu Thr Ala His Ser Arg Pro Val Thr Leu Ser Pro Arg Gln Gly  
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	665					670					675									
acg	gcg	ctg	cat	ctg	gct	gcc	ctc	aac	aac	cac	cgc	gag	gtg	gcc	cag	2177				
Thr	Ala	Leu	His	Leu	Ala	Ala	Leu	Asn	Asn	His	Arg	Glu	Val	Ala	Gln					
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Val Pro Leu Leu Val Asp Ala Gly Cys Ser Val Asn Ala Glu Asp Glu	
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Glu Gly Asp Thr Ala Leu His Val Ala Leu Gln Arg His Gln Leu Leu	
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Pro Leu Val Ala Asp Gly Ala Gly Gly Asp Pro Gly Pro Leu Gln Leu	
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Pro Gln Ala Gly Val Gln Val Gly Met Arg Val Val Arg Gly Val Asp  
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His His Ser Phe Trp Val Gly Asp Val Val Arg Val Ile Gly Asp Leu  
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Asn His Arg Glu Val Ala Gln Ile Leu Ile Arg Glu Gly Arg Cys Asp  
690 695 700

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Gln Gln Ala His Val Gly Leu Val Pro Leu Leu Val Asp Ala Gly Cys  
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Ser Val Asn Ala Glu Asp Glu Glu Gly Asp Thr Ala Leu His Val Ala  
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Met Ile Ala Trp Arg Leu Pro Leu

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Pro Lys Asn Val Ser Gln Lys Asp Ala Glu Phe Glu Arg Thr Tyr Ala  
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Leu Ser Pro Val Asn Thr Thr Tyr Gln Leu Arg Val Asn Arg Val Asp  
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 Ala Glu Phe Glu Arg Thr Tyr Ala Asp Asp Val Asn Ser Glu Leu Val  
 35 40 45  
 Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn Arg Thr Glu Gly

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Val Arg Val Ser Val Asn Val Leu Asn Lys Gln Lys Gly Ala Pro Leu		
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Leu Phe Val Val Arg Gln Lys Glu Ala Val Val Ser Phe Gln Val Pro		
	85	90
Leu Ile Leu Arg Gly Leu Tyr Gln Arg Lys Tyr Leu Tyr Gln Lys Val		
	100	105
Glu Arg Thr Leu Cys Gln Pro Pro Thr Lys Asn Glu Ser Glu Ile Gln		
	115	120
Phe Phe Tyr Val Asp Val Ser Thr Leu Ser Pro Val Asn Thr Thr Tyr		
	130	135
Gln Leu Arg Val Asn Arg Val Asp Asn Phe Val Leu Arg Thr Gly Glu		
145	150	155
Leu Phe Thr Phe Asn Thr Thr Ala Ala Gln Pro Gln Tyr Phe Lys Tyr		
	165	170
Glu Phe Pro Asp Gly Val Asp Ser Val Ile Val Lys Val Thr Ser Lys		
	180	185
Lys Ala Phe Pro Cys Ser Val Ile Ser Ile Gln Asp Val Leu Cys Pro		
	195	200
Val Tyr Asp Leu Asp Asn Ser Val Ala Phe Ile Gly Met Tyr Gln Thr		
	210	215
Met Thr Lys Lys Ala Ala Ile Thr Val Gln Arg Lys Asp Phe Pro Ser		
225	230	235
Asn Ser Phe Tyr Val Val Val Val Val Lys Thr Glu Asp Gln Ala Cys		
	245	250
Gly Gly Ser Leu Pro Phe Tyr Pro Phe Val Glu Asp Glu Pro Val Asp		
	260	265
Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser Gln Ala Val		
	275	280
Thr Ser Glu Ala Tyr Val Gly Gly Met Leu Phe Cys Leu Gly Ile Phe		
	290	295
Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala Cys Trp Glu Asn Trp		
305	310	315
Arg Gln Arg Lys Lys Thr Leu Leu Val Ala Ile Asp Arg Ala Cys Pro		
	325	330
Glu Ser Gly His Ala Arg Val Leu Ala Asp Ser Phe Pro Gly Ser Ala		
	340	345
Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe Glu Asn Gly Ser Gly Ser		

355					360					365					
Thr	Asp	Gly	Leu	Val	Glu	Ser	Ala	Gly	Ser	Gly	Asp	Leu	Ser	Tyr	Ser
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Tyr	Gln	Gly	His	Asp	Gln	Phe	Lys	Arg	Arg	Leu	Pro	Ser	Gly	Gln	Met
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Arg	Gln	Leu	Cys	Ile	Ala	Met	Asp	Arg	Ser	Phe	Asp	Ala	Val	Gly	Pro
				405					410					415	
Arg	Pro	Arg	Leu	Asp	Ser	Met	Ser	Ser	Val	Glu	Glu	Asp	Asp	Tyr	Asp
			420					425					430		
Thr	Leu	Thr	Asp	Ile	Asp	Ser	Asp	Lys	Asn	Val	Ile	Arg	Thr	Lys	Gln
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Tyr	Leu	Cys	Val	Ala	Asp	Leu	Ala	Arg	Lys	Asp	Lys	Arg	Val	Leu	Arg
450					455					460					
Lys	Lys	Tyr	Gln	Ile	Tyr	Phe	Trp	Asn	Ile	Ala	Thr	Ile	Ala	Val	Phe
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Tyr	Ala	Leu	Pro	Val	Val	Gln	Leu	Val	Ile	Thr	Tyr	Gln	Thr	Val	Val
				485					490					495	
Asn	Val	Thr	Gly	Asn	Gln	Asp	Ile	Cys	Tyr	Tyr	Asn	Phe	Leu	Cys	Ala
			500					505					510		
His	Pro	Leu	Gly	Asn	Leu	Ser	Ala	Phe	Asn	Asn	Ile	Leu	Ser	Asn	Leu
	515					520					525				
Gly	Tyr	Ile	Leu	Leu	Gly	Leu	Leu	Phe	Leu	Leu	Ile	Ile	Leu	Gln	Arg
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Glu	Ile	Asn	His	Asn	Arg	Ala	Leu	Leu	Arg	Asn	Asp	Leu	Tyr	Ala	Leu
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Glu	Cys	Gly	Ile	Pro	Lys	His	Phe	Gly	Leu	Phe	Tyr	Ala	Met	Gly	Thr
				565					570					575	
Ala	Leu	Met	Met	Glu	Gly	Leu	Leu	Ser	Ala	Cys	Tyr	His	Val	Cys	Pro
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Asn	Tyr	Thr	Asn	Phe	Gln	Phe	Asp	Thr	Ser	Phe	Met	Tyr	Met	Ile	Ala
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Gly	Leu	Cys	Met	Leu	Lys	Leu	Tyr	Gln	Lys	Arg	His	Pro	Asp	Ile	Asn
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Ala	Ser	Ala	Tyr	Ser	Ala	Tyr	Ala	Cys	Leu	Ala	Ile	Val	Ile	Phe	Phe
625				630						635					640
Ser	Val	Leu	Gly	Val	Val	Phe	Gly	Lys	Gly	Asn	Thr	Ala	Phe	Trp	Ile
				645					650					655	
Val	Phe	Ser	Val	Ile	His	Ile	Ile	Ser	Thr	Leu	Leu	Leu	Ser	Thr	Gln

660	665	670
Leu Tyr Tyr Met Gly Arg Trp Lys Leu Asp Phe Gly Ile Phe Arg Arg 675 680 685		
Ile Leu His Val Leu Tyr Thr Asp Cys Ile Arg Gln Cys Ser Gly Pro 690 695 700		
Leu Tyr Thr Asp Arg Met Val Leu Leu Val Met Gly Asn Ile Ile Asn 705 710 715 720		
Trp Ser Leu Ala Ala Tyr Gly Leu Ile Met Arg Pro Asn Asp Phe Ala 725 730 735		
Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn Leu Leu Leu Tyr Phe Ala 740 745 750		
Phe Tyr Ile Ile Met Lys Leu Arg Ser Gly Glu Arg Ile Lys Leu Ile 755 760 765		
Pro Leu Leu Cys Ile Val Cys Thr Ser Val Val Trp Gly Phe Ala Leu 770 775 780		
Phe Phe Phe Phe Gln Gly Leu Ser Thr Trp Gln Lys Thr Pro Ala Glu 785 790 795 800		
Ser Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp Phe Phe Asp Asp 805 810 815		
His Asp Ile Trp His Phe Leu Ser Ser Ile Ala Met Phe Gly Ser Phe 820 825 830		
Leu Val Leu Leu Thr Leu Asp Asp Asp Leu Asp Thr Val Gln Arg Asp 835 840 845		
Lys Ile Tyr Val Phe 850		

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 Met Phe Ala Leu Gly Leu Pro Phe Leu Val  
 1 5 10  
 ctc ttg gtg gcc tcg gtc gag agc cat ctg ggg gtt ctg ggg ccc aag 161

Leu	Leu	Val	Ala	Ser	Val	Glu	Ser	His	Leu	Gly	Val	Leu	Gly	Pro	Lys	
				15					20					25		
aac	gtc	tcg	cag	aaa	gac	gcc	gag	ttt	gag	cgc	acc	tac	gtg	gac	gag	209
Asn	Val	Ser	Gln	Lys	Asp	Ala	Glu	Phe	Glu	Arg	Thr	Tyr	Val	Asp	Glu	
			30					35					40			
gtc	aac	agc	gag	ctg	gtc	aac	atc	tac	acc	ttc	aac	cat	act	gtg	acc	257
Val	Asn		Glu	Leu	Val	Asn	Ile	Tyr	Thr	Phe	Asn	His	Thr	Val	Thr	
		45					50					55				
cgc	aac	agg	aca	gag	ggc	gtg	cgt	gtg	tct	gtg	aac	gtc	ctg	aac	aag	305
Arg	Asn	Arg	Thr	Glu	Gly	Val	Arg	Val	Ser	Val	Asn	Val	Leu	Asn	Lys	
	60					65					70					
cag	aag	ggg	gcg	ccg	ttg	ctg	ttt	gtg	gtc	cgc	cag	aag	gag	gct	gtg	353
Gln	Lys	Gly	Ala	Pro		Leu	Phe	Val	Val	Arg	Gln	Lys	Glu	Ala	Val	
	75				80					85					90	
gtg	tcc	ttc	cag	gtg	ccc	cta	atc	ctg	cga	ggg	atg	ttt	cag	cgc	aag	401
Val	Ser	Phe	Gln	Val	Pro	Leu	Ile	Leu	Arg	Gly	Met	Phe	Gln	Arg	Lys	
			95						100					105		
tac	ctc	tac	caa	aaa	gtg	gaa	cga	acc	ctg	tgt	cag	ccc	ccc	acc	aag	449
Tyr	Leu	Tyr	Gln	Lys	Val	Glu	Arg	Thr	Leu	Cys	Gln	Pro	Pro	Thr	Lys	
			110					115					120			
aat	gag	tcg	gag	att	cag	ttc	ttc	tac	gtg	gat	gtg	tcc	acc	ctg	tca	497
Asn	Glu	Ser	Glu	Ile	Gln	Phe	Phe	Tyr	Val	Asp	Val	Ser	Thr	Leu	Ser	
		125					130					135				
cca	gtc	aac	acc	aca	tac	cag	ctc	cgg	gtc	agc	cgc	atg	gac	gat	ttt	545
Pro	Val	Asn	Thr	Thr	Tyr	Gln	Leu	Arg	Val	Ser	Arg	Met	Asp	Asp	Phe	
	140					145					150					
gtg	ctc	agg	act	ggg	gag	cag	ttc	agc	ttc	aat	acc	aca	gca	gca	cag	593
Val	Leu	Arg	Thr	Gly	Glu	Gln	Phe	Ser	Phe	Asn	Thr	Thr	Ala	Ala	Gln	
	155				160					165					170	
ccc	cag	tac	ttc	aag	tat	gag	ttc	cct	gaa	ggc	gtg	gac	tcg	gta	att	641
Pro	Gln	Tyr	Phe	Lys	Tyr	Glu	Phe	Pro	Glu	Gly	Val	Asp	Ser	Val	Ile	
			175						180					185		
gtc	aag	gtg	acc	tcc	aac	aag	gcc	ttc	ccc	tgc	tca	gtc	atc	tcc	att	689
Val	Lys	Val	Thr	Ser	Asn	Lys	Ala	Phe	Pro	Cys	Ser	Val	Ile	Ser	Ile	
			190					195					200			
cag	gat	gtg	ctg	tgt	cct	gtc	tat	gac	ctg	gac	aac	aac	gta	gcc	ttc	737
Gln	Asp	Val	Leu	Cys	Pro	Val	Tyr	Asp	Leu	Asp	Asn	Asn	Val	Ala	Phe	
		205					210					215				
atc	ggc	atg	tac	cag	acg	atg	acc	aag	aag	gcg	gcc	atc	acc	gta	cag	785
Ile	Gly	Met	Tyr	Gln	Thr	Met	Thr	Lys	Lys	Ala	Ala	Ile	Thr	Val	Gln	
	220					225					230					
cgc	aaa	gac	ttc	ccc	agc	aac	agc	ttt	tat	gtg	gtg	gtg	gtg	gtg	aag	833
Arg	Lys	Asp	Phe	Pro	Ser	Asn	Ser	Phe	Tyr	Val	Val	Val	Val	Val	Lys	



235	240	245	250	
acc gaa gac caa gcc tgc ggg ggc tcc ctg cct ttc tac ccc ttc gca	881			
Thr Glu Asp Gln Ala Cys Gly Gly Ser Leu Pro Phe Tyr Pro Phe Ala				
255	260	265		
gaa gat gaa ccg gtc gat caa ggg cac cgc cag aaa acc ctg tca gtg	929			
Glu Asp Glu Pro Val Asp Gln Gly His Arg Gln Lys Thr Leu Ser Val				
270	275	280		
ctg gtg tct caa gca gtc acg tct gag gca tac gtc agt ggg atg ctc	977			
Leu Val Ser Gln Ala Val Thr Ser Glu Ala Tyr Val Ser Gly Met Leu				
285	290	295		
ttt tgc ctg ggt ata ttt ctc tcc ttt tac ctg ctg acc gtc ctc ctg	1025			
Phe Cys Leu Gly Ile Phe Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu				
300	305	310		
gcc tgc tgg gag aac tgg agg cag aag aag aag acc ctg ctg gtg gcc	1073			
Ala Cys Trp Glu Asn Trp Arg Gln Lys Lys Lys Thr Leu Leu Val Ala				
315	320	325	330	
att gac cga gcc tgc cca gaa agc ggt cac cct cga gtc ctg gct gat	1121			
Ile Asp Arg Ala Cys Pro Glu Ser Gly His Pro Arg Val Leu Ala Asp				
335	340	345		
tct ttt cct ggc agt tcc cct tat gag ggt tac aac tat ggc tcc ttt	1169			
Ser Phe Pro Gly Ser Ser Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe				
350	355	360		
gag aat gtt tct gga tct acc gat ggt ctg gtt gac agc gct ggc act	1217			
Glu Asn Val Ser Gly Ser Thr Asp Gly Leu Val Asp Ser Ala Gly Thr				
365	370	375		
ggg gac ctc tct tac ggt tac cag ggg cac gac cag ttc aag cgg cgc	1265			
Gly Asp Leu Ser Tyr Gly Tyr Gln Gly His Asp Gln Phe Lys Arg Arg				
380	385	390		
ctc ccc tct ggc cag atg cgg cag ctg tgc att gcc atg ggc cgc tcc	1313			
Leu Pro Ser Gly Gln Met Arg Gln Leu Cys Ile Ala Met Gly Arg Ser				
395	400	405	410	
ttt gaa cct gta ggt act cgg ccc cga gtg gac tcc atg agc tct gtg	1361			
Phe Glu Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser Val				
415	420	425		
gag gag gat gac tac gac aca ttg acc gac atc gat tcc gac aag aat	1409			
Glu Glu Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys Asn				
430	435	440		
gtc att cgc acc aag caa tac ctc tat gtg gct gac ctg gca cgg aag	1457			
Val Ile Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala Arg Lys				
445	450	455		
gac aag cgt gtt ctg cgg aaa aag tac cag atc tac ttc tgg aac att	1505			
Asp Lys Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe Trp Asn Ile				
460	465	470		

gcc acc att gct gtc ttc tat gcc ctt cct gtg gtg cag ctg gtg atc	1553
Ala Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Val Gln Leu Val Ile	
475 480 485 490	
acc tac cag acg gtg gtg aat gtc aca ggg aat cag gac atc tgc tac	1601
Thr Tyr Gln Thr Val Val Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr	
495 500 505	
tac aac ttc ctc tgc gcc cac cca ctg ggc aat ctc agc gcc ttc aac	1649
Tyr Asn Phe Leu Cys Ala His Pro Leu Gly Asn Leu Ser Ala Phe Asn	
510 515 520	
aac atc ctc agc aac ctg ggg tac atc ctg ctg ggg ctg ctt ttc ctg	1697
Asn Ile Leu Ser Asn Leu Gly Tyr Ile Leu Leu Gly Leu Leu Phe Leu	
525 530 535	
ctc atc atc ctg caa cgg gag atc aac cac aac cgg gcc ctg ctg cgc	1745
Leu Ile Ile Leu Gln Arg Glu Ile Asn His Asn Arg Ala Leu Leu Arg	
540 545 550	
aat gac ctc tgt gcc ctg gaa tgt ggg atc ccc aaa cac ttt ggg ctt	1793
Asn Asp Leu Cys Ala Leu Glu Cys Gly Ile Pro Lys His Phe Gly Leu	
555 560 565 570	
ttc tac gcc atg ggc aca gcc ctg atg atg gag ggg ctg ctc agt gct	1841
Phe Tyr Ala Met Gly Thr Ala Leu Met Met Glu Gly Leu Leu Ser Ala	
575 580 585	
tgc tat cat gtg tgc ccc aac tat acc aat ttc cag ttt gac aca tcg	1889
Cys Tyr His Val Cys Pro Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser	
590 595 600	
ttc atg tac atg atc gcc gga ctc tgc atg ctg aag ctc tac cag aag	1937
Phe Met Tyr Met Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys	
605 610 615	
cgg cac ccg gac atc aac gcc agc gcc tac agt gcc tac gcc tgc ctg	1985
Arg His Pro Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu	
620 625 630	
gcc att gtc atc ttc ttc tct gtg ctg ggc gtg gtc ttt ggc aaa ggg	2033
Ala Ile Val Ile Phe Phe Ser Val Leu Gly Val Val Phe Gly Lys Gly	
635 640 645 650	
aac acg gcg ttc tgg atc gtc ttc tcc atc att cac atc atc gcc acc	2081
Asn Thr Ala Phe Trp Ile Val Phe Ser Ile Ile His Ile Ile Ala Thr	
655 660 665	
ctg ctc ctc agc acg cag ctc tat tac atg ggc cgg tgg aaa ctg gac	2129
Leu Leu Leu Ser Thr Gln Leu Tyr Tyr Met Gly Arg Trp Lys Leu Asp	
670 675 680	
tcg ggg atc ttc cgc cgc atc ctc cac gtg ctc tac aca gac tgc atc	2177
Ser Gly Ile Phe Arg Arg Ile Leu His Val Leu Tyr Thr Asp Cys Ile	
685 690 695	

cgg	cag	tgc	agc	ggg	ccg	ctc	tac	gtg	gac	cgc	atg	gtg	ctg	ctg	gtc	2225
Arg	Gln	Cys	Ser	Gly	Pro	Leu	Tyr	Val	Asp	Arg	Met	Val	Leu	Leu	Val	
700						705					710					
atg	ggc	aac	gtc	atc	aac	tgg	tcg	ctg	gct	gcc	tat	ggg	ctt	atc	atg	2273
Met	Gly	Asn	Val	Ile	Asn	Trp	Ser	Leu	Ala	Ala	Tyr	Gly	Leu	Ile	Met	
715					720					725					730	
cgc	ccc	aat	gat	ttc	gct	tcc	tac	ttg	ttg	gcc	att	ggc	atc	tgc	aac	2321
Arg	Pro	Asn	Asp	Phe	Ala	Ser	Tyr	Leu	Leu	Ala	Ile	Gly	Ile	Cys	Asn	
				735						740					745	
ctg	ctc	ctt	tac	ttc	gcc	ttc	tac	atc	atc	atg	aag	ctc	cgg	agt	ggg	2369
Leu	Leu	Leu	Tyr	Phe	Ala	Phe	Tyr	Ile	Ile	Met	Lys	Leu	Arg	Ser	Gly	
			750							755					760	
gag	agg	atc	aag	ctc	atc	ccc	ctg	ctc	tgc	atc	gtt	tgc	acc	tcc	gtg	2417
Glu	Arg	Ile	Lys	Leu	Ile	Pro	Leu	Leu	Cys	Ile	Val	Cys	Thr	Ser	Val	
		765								770						
gtc	tgg	ggc	ttc	gcg	ctc	ttc	ttc	ttc	ttc	cag	gga	ctc	agc	acc	tgg	2465
Val	Trp	Gly	Phe	Ala	Leu	Phe	Phe	Phe	Phe	Gln	Gly	Leu	Ser	Thr	Trp	
		780								785						
cag	aaa	acc	cct	gca	gag	tgc	agg	gag	cac	aac	cgg	gac	tgc	atc	ctc	2513
Gln	Lys	Thr	Pro	Ala	Glu	Ser	Arg	Glu	His	Asn	Arg	Asp	Cys	Ile	Leu	
795						800				805					810	
ctc	gac	ttc	ttt	gac	gac	cac	gac	atc	tgg	cac	ttc	ctc	tcc	tcc	atc	2561
Leu	Asp	Phe	Phe	Asp	Asp	His	Asp	Ile	Trp	His	Phe	Leu	Ser	Ser	Ile	
				815						820					825	
gcc	atg	ttc	ggg	tcc	ttc	ctg	gta	agc	ggg	cct	ccc	ggc	cga	gcc	ggg	2609
Ala	Met	Phe	Gly	Ser	Phe	Leu	Val	Ser	Gly	Pro	Pro	Gly	Arg	Ala	Gly	
			830							835					840	
tgg	gta	cgt	gaa	ggc	agc	agc	tgc	ctc	ctt	ccc	tgt	ggc	tgatctggcg			2658
Trp	Val	Arg	Glu	Gly	Ser	Ser	Cys	Leu	Leu	Pro	Cys	Gly				
		845								850						
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 <212> PRT  
 <213> Homo sapiens

<400> 166

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			20					25					30		
Ala	Glu	Phe	Glu	Arg	Thr	Tyr	Val	Asp	Glu	Val	Asn	Ser	Glu	Leu	Val
		35					40					45			
Asn	Ile	Tyr	Thr	Phe	Asn	His	Thr	Val	Thr	Arg	Asn	Arg	Thr	Glu	Gly
	50					55					60				
Val	Arg	Val	Ser	Val	Asn	Val	Leu	Asn	Lys	Gln	Lys	Gly	Ala	Pro	Leu
65					70					75					80
Leu	Phe	Val	Val	Arg	Gln	Lys	Glu	Ala	Val	Val	Ser	Phe	Gln	Val	Pro
				85					90					95	
Leu	Ile	Leu	Arg	Gly	Met	Phe	Gln	Arg	Lys	Tyr	Leu	Tyr	Gln	Lys	Val
			100					105					110		
Glu	Arg	Thr	Leu	Cys	Gln	Pro	Pro	Thr	Lys	Asn	Glu	Ser	Glu	Ile	Gln
			115					120					125		
Phe	Phe	Tyr	Val	Asp	Val	Ser	Thr	Leu	Ser	Pro	Val	Asn	Thr	Thr	Tyr
		130					135					140			
Gln	Leu	Arg	Val	Ser	Arg	Met	Asp	Asp	Phe	Val	Leu	Arg	Thr	Gly	Glu
145					150					155					160
Gln	Phe	Ser	Phe	Asn	Thr	Thr	Ala	Ala	Gln	Pro	Gln	Tyr	Phe	Lys	Tyr
				165					170					175	
Glu	Phe	Pro	Glu	Gly	Val	Asp	Ser	Val	Ile	Val	Lys	Val	Thr	Ser	Asn
			180					185					190		
Lys	Ala	Phe	Pro	Cys	Ser	Val	Ile	Ser	Ile	Gln	Asp	Val	Leu	Cys	Pro
		195					200					205			
Val	Tyr	Asp	Leu	Asp	Asn	Asn	Val	Ala	Phe	Ile	Gly	Met	Tyr	Gln	Thr
		210				215					220				
Met	Thr	Lys	Lys	Ala	Ala	Ile	Thr	Val	Gln	Arg	Lys	Asp	Phe	Pro	Ser
225					230					235					240
Asn	Ser	Phe	Tyr	Val	Val	Val	Val	Val	Lys	Thr	Glu	Asp	Gln	Ala	Cys
				245					250					255	
Gly	Gly	Ser	Leu	Pro	Phe	Tyr	Pro	Phe	Ala	Glu	Asp	Glu	Pro	Val	Asp
			260					265					270		

Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser Gln Ala Val  
275 280 285

Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys Leu Gly Ile Phe  
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Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala Cys Trp Glu Asn Trp  
305 310 315 320

Arg Gln Lys Lys Lys Thr Leu Leu Val Ala Ile Asp Arg Ala Cys Pro  
325 330 335

Glu Ser Gly His Pro Arg Val Leu Ala Asp Ser Phe Pro Gly Ser Ser  
340 345 350

Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe Glu Asn Val Ser Gly Ser  
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Thr Asp Gly Leu Val Asp Ser Ala Gly Thr Gly Asp Leu Ser Tyr Gly  
370 375 380

Tyr Gln Gly His Asp Gln Phe Lys Arg Arg Leu Pro Ser Gly Gln Met  
385 390 395 400

Arg Gln Leu Cys Ile Ala Met Gly Arg Ser Phe Glu Pro Val Gly Thr  
405 410 415

Arg Pro Arg Val Asp Ser Met Ser Ser Val Glu Glu Asp Asp Tyr Asp  
420 425 430

Thr Leu Thr Asp Ile Asp Ser Asp Lys Asn Val Ile Arg Thr Lys Gln  
435 440 445

Tyr Leu Tyr Val Ala Asp Leu Ala Arg Lys Asp Lys Arg Val Leu Arg  
450 455 460

Lys Lys Tyr Gln Ile Tyr Phe Trp Asn Ile Ala Thr Ile Ala Val Phe  
465 470 475 480

Tyr Ala Leu Pro Val Val Gln Leu Val Ile Thr Tyr Gln Thr Val Val  
485 490 495

Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr Tyr Asn Phe Leu Cys Ala  
500 505 510

His Pro Leu Gly Asn Leu Ser Ala Phe Asn Asn Ile Leu Ser Asn Leu  
515 520 525

Gly Tyr Ile Leu Leu Gly Leu Leu Phe Leu Leu Ile Ile Leu Gln Arg  
530 535 540

Glu Ile Asn His Asn Arg Ala Leu Leu Arg Asn Asp Leu Cys Ala Leu  
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Glu Cys Gly Ile Pro Lys His Phe Gly Leu Phe Tyr Ala Met Gly Thr  
565 570 575

Ala Leu Met Met Glu Gly Leu Leu Ser Ala Cys Tyr His Val Cys Pro  
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 Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys Arg His Pro Asp Ile Asn  
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 Ser Val Leu Gly Val Val Phe Gly Lys Gly Asn Thr Ala Phe Trp Ile  
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 Val Phe Ser Ile Ile His Ile Ile Ala Thr Leu Leu Leu Ser Thr Gln  
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 Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn Leu Leu Leu Tyr Phe Ala  
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 Phe Tyr Ile Ile Met Lys Leu Arg Ser Gly Glu Arg Ile Lys Leu Ile  
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 Arg Arg Gln Pro Ala Lys Val Ala Ala Leu Leu Leu Gly Leu Leu Leu  
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 gag tgc aca gaa gcc aaa aag cat tgc tgg tat ttc gaa gga ctc tat 154  
 Glu Cys Thr Glu Ala Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr  
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 Pro Thr Tyr Tyr Ile Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg  
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 Arg Arg Arg Met Tyr Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe Asn  
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 Val Ser Tyr Thr Arg Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln Gln  
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 Pro Pro Pro Tyr Glu Gln Val Val Lys Ala Lys  
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Tyr	Pro	Thr	Tyr	Tyr	Ile	Cys	Arg	Ser	Tyr	Glu	Asp	Cys	Cys	Gly	Ser
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Arg	Cys	Cys	Val	Arg	Ala	Leu	Ser	Ile	Gln	Arg	Leu	Trp	Tyr	Phe	Trp
	50					55					60				
Phe	Leu	Leu	Met	Met	Gly	Val	Leu	Phe	Cys	Cys	Gly	Ala	Gly	Phe	Phe
65					70				75						80
Ile	Arg	Arg	Arg	Met	Tyr	Pro	Pro	Pro	Leu	Ile	Glu	Glu	Pro	Ala	Phe
			85					90						95	
Asn	Val	Ser	Tyr	Thr	Arg	Gln	Pro	Pro	Asn	Pro	Gly	Pro	Gly	Ala	Gln
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Gln	Pro	Gly	Pro	Pro	Tyr	Tyr	Thr	Asp	Pro	Gly	Gly	Pro	Gly	Met	Asn
		115					120					125			
Pro	Val	Gly	Asn	Ser	Met	Ala	Met	Ala	Phe	Gln	Val	Pro	Pro	Asn	Ser
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Pro	Gln	Gly	Ser	Val	Ala	Cys	Pro	Pro	Pro	Pro	Ala	Tyr	Cys	Asn	Thr
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Pro	Pro	Pro	Pro	Tyr	Glu	Gln	Val	Val	Lys	Ala	Lys				

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170

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 agaatctgag cagca atg ccg ttt gct gaa gac aag acc tat aag tat atc 171  
                   Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile  
                   1                  5                  10  
 tgc cgc aat ttc agc aat ttt tgc aat gtg gat gtt gta gag att ctg 219  
 Cys Arg Asn Phe Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu  
                   15                  20                  25  
 cct tac ctg ccc tgc ctc aca gca aga gac cag gat cga ctg cgg gcc 267  
 Pro Tyr Leu Pro Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala  
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 acc tgc aca ctc tca ggg aac cgg gac acc ctc tgg cat ctc ttc aat 315  
 Thr Cys Thr Leu Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn  
                   45                  50                  55                  60  
 acc ctt cag cgg cgg ccc ggc tgg gtg gag tac ttc att gcg gca ctg 363  
 Thr Leu Gln Arg Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu  
                   65                  70                  75  
 agg ggc tgt gag cta gtt gat ctc gcg gac gaa gtg gcc tct gtc tac 411  
 Arg Gly Cys Glu Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr  
                   80                  85                  90  
 cag agc tac cag cct cgg acc tcg gac cgt ccc cca gac cca ctg gag 459  
 Gln Ser Tyr Gln Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu  
                   95                  100                  105  
 cca ccg tca ctt cct gct gag agg cca ggg ccc ccc aca cct gct gcg 507  
 Pro Pro Ser Leu Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala  
                   110                  115                  120  
 gcc cac agc atc ccc tac aac agc tgc aga gag aag gag cca agt tac 555  
 Ala His Ser Ile Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr  
                   125                  130                  135                  140  
 ccc atg cct gtc cag gag acc cag gcg cca gag tcc cca gga gag aat 603  
 Pro Met Pro Val Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn  
                   145                  150                  155

tca gag caa gcc ctg cag acg ctc agc ccc aga gcc atc cca agg aat	651
Ser Glu Gln Ala Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn	
160 165 170	
cca gat ggt ggc ccc ctg gag tcc tcc tct gac ctg gca gcc ctc agc	699
Pro Asp Gly Gly Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser	
175 180 185	
cct ctg acc tcc agc ggg cat cag gag cag gac aca gaa ctg ggc agt	747
Pro Leu Thr Ser Ser Gly His Gln Glu Gln Asp Thr Glu Leu Gly Ser	
190 195 200	
acc cac aca gca ggt gcg acc tcc agc ctc aca cca tcc cgt ggc cct	795
Thr His Thr Ala Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly Pro	
205 210 215 220	
gtg tct cca tct gtc tcc ttc cag ccc ctg gcc cgt tcc acc ccc agg	843
Val Ser Pro Ser Val Ser Phe Gln Pro Leu Ala Arg Ser Thr Pro Arg	
225 230 235	
gca agc cgc ttg cct gga ccc aca ggg tca gtt gta tct act ggc acc	891
Ala Ser Arg Leu Pro Gly Pro Thr Gly Ser Val Val Ser Thr Gly Thr	
240 245 250	
tcc ttc tcc tcc tca tcc cct ggc ttg gcc tct gca ggg gct gca gag	939
Ser Phe Ser Ser Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala Glu	
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ggt aaa cag ggt gca gag agt gac cag gcc gag cct atc atc tgc tcc	987
Gly Lys Gln Gly Ala Glu Ser Asp Gln Ala Glu Pro Ile Ile Cys Ser	
270 275 280	
agt ggg gca gag gca cct gcc aac tct ctg ccc tcc aaa gtg cct acc	1035
Ser Gly Ala Glu Ala Pro Ala Asn Ser Leu Pro Ser Lys Val Pro Thr	
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acc ttg atg cct gtg aac aca gtg gcc ctg aaa gtg cct gcc aac cca	1083
Thr Leu Met Pro Val Asn Thr Val Ala Leu Lys Val Pro Ala Asn Pro	
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gca tct gtc agc aca gtg ccc tcc aag ttg cca act agc tca aag ccc	1131
Ala Ser Val Ser Thr Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro	
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cct ggt gca gtg cct tct aat gcg ctc acc aat cca gca cca tcc aaa	1179
Pro Gly Ala Val Pro Ser Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys	
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Leu Pro Ile Asn Ser Thr Arg Ala Gly Met Val Pro Ser Lys Val Pro	
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Thr Ser Met Val Leu Thr Lys Val Ser Ala Ser Thr Val Pro Thr Asp	
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gcc	act	gga	ggc	agc	tca	gcc	tgg	cta	gac	agc	agc	tct	gag	aat	agg	1371
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Gly	Leu	Gly	Ser	Glu	Leu	Ser	Lys	Pro	Gly	Val	Leu	Ala	Ser	Gln	Val	
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Asp	Ser	Pro	Phe	Ser	Gly	Cys	Phe	Glu	Asp	Leu	Ala	Ile	Ser	Ala	Ser	
	430					435					440					
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Thr	Ser	Leu	Gly	Met	Gly	Pro	Cys	His	Gly	Pro	Glu	Glu	Asn	Glu	Tyr	
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Lys	Ser	Glu	Gly	Thr	Phe	Gly	Ile	His	Val	Ala	Glu	Asn	Pro	Ser	Ile	
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cag	ctc	ctg	gag	ggc	aac	cct	ggg	cca	cct	gcg	gac	ccg	gat	ggc	ggc	1611
Gln	Leu	Leu	Glu	Gly	Asn	Pro	Gly	Pro	Pro	Ala	Asp	Pro	Asp	Gly	Gly	
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Pro	Arg	Pro	Gln	Ala	Asp	Arg	Lys	Phe	Gln	Glu	Arg	Glu	Val	Pro	Cys	
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His	Arg	Pro	Ser	Pro	Gly	Ala	Leu	Trp	Leu	Gln	Val	Ala	Val	Thr	Gly	
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gtg	ctg	gta	gtc	aca	ctc	ctg	gtg	gtg	ctg	tac	cgg	cgg	cgt	ctg	cac	1755
Val	Leu	Val	Val	Thr	Leu	Leu	Val	Val	Leu	Tyr	Arg	Arg	Arg	Leu	His	
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 <212> PRT  
 <213> Homo sapiens

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 Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu  
 35 40 45  
 Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg  
 50 55 60  
 Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu

65		70		75		80
Leu Val Asp	Leu Ala Asp	Glu Val Ala Ser	Val Tyr Gln Ser	Tyr Gln		
	85	90	95			
Pro Arg Thr	Ser Asp Arg	Pro Pro Asp	Pro Leu Glu	Pro Pro Ser	Leu	
	100	105	110			
Pro Ala Glu	Arg Pro Gly	Pro Pro Thr	Pro Ala Ala	Ala His Ser	Ile	
	115	120	125			
Pro Tyr Asn	Ser Cys Arg	Glu Lys Glu	Pro Ser Tyr	Pro Met Pro	Val	
	130	135	140			
Gln Glu Thr	Gln Ala Pro	Glu Ser Pro	Gly Glu Asn	Ser Glu Gln	Ala	
	145	150	155	160		
Leu Gln Thr	Leu Ser Pro	Arg Ala Ile	Pro Arg Asn	Pro Asp Gly	Gly	
	165	170	175			
Pro Leu Glu	Ser Ser Asp	Leu Ala Ala	Leu Ser Pro	Leu Thr Ser		
	180	185	190			
Ser Gly His	Gln Glu Gln	Asp Thr Glu	Leu Gly Ser	Thr His Thr	Ala	
	195	200	205			
Gly Ala Thr	Ser Ser Leu	Thr Pro Ser	Arg Gly Pro	Val Ser Pro	Ser	
	210	215	220			
Val Ser Phe	Gln Pro Leu	Ala Arg Ser	Thr Pro Arg	Ala Ser Arg	Leu	
	225	230	235	240		
Pro Gly Pro	Thr Gly Ser	Val Val Ser	Thr Gly Thr	Ser Phe Ser	Ser	
	245	250	255			
Ser Ser Pro	Gly Leu Ala	Ser Ala Gly	Ala Ala Glu	Gly Lys Gln	Gly	
	260	265	270			
Ala Glu Ser	Asp Gln Ala	Glu Pro Ile	Ile Cys Ser	Ser Gly Ala	Glu	
	275	280	285			
Ala Pro Ala	Asn Ser Leu	Pro Ser Lys	Val Pro Thr	Thr Leu Met	Pro	
	290	295	300			
Val Asn Thr	Val Ala Leu	Lys Val Pro	Ala Asn Pro	Ala Ser Val	Ser	
	305	310	315	320		
Thr Val Pro	Ser Lys Leu	Pro Thr Ser	Ser Lys Pro	Pro Gly Ala	Val	
	325	330	335			
Pro Ser Asn	Ala Leu Thr	Asn Pro Ala	Pro Ser Lys	Leu Pro Ile	Asn	
	340	345	350			
Ser Thr Arg	Ala Gly Met	Val Pro Ser	Lys Val Pro	Thr Ser Met	Val	
	355	360	365			
Leu Thr Lys	Val Ser Ala	Ser Thr Val	Pro Thr Asp	Gly Ser Ser	Arg	

370	375	380
Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly Ala Thr Gly Gly		
385	390	395 400
Ser Ser Ala Trp Leu Asp Ser Ser Ser Glu Asn Arg Gly Leu Gly Ser		
	405	410 415
Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe		
	420	425 430
Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly		
	435	440 445
Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly		
	450	455 460
Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu		
465	470	475 480
Gly Asn Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly Pro Arg Pro Gln		
	485	490 495
Ala Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys His Arg Pro Ser		
	500	505 510
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 gcggggcgcc gacgaggagt gcaggactca ggaagggcga gtgcgcggcg acagagcccc 180  
 gggaaggagg cagggcaagg ccgggcttgg gggcaggtgg tccgggcac cagccttgaa 240  
 g atg cac aag agg aaa gga ccc ccg gga ccc ccg ggc aga ggc gcc gcg 289  
 Met His Lys Arg Lys Gly Pro Pro Gly Pro Pro Gly Arg Gly Ala Ala  
 1 5 10 15  
 gcc gcc cgc cag ctg gcc ctg ctg gtt gac ctc tcc cca gat ggc ctg 337

Ala	Ala	Arg	Gln	Leu	Gly	Leu	Leu	Val	Asp	Leu	Ser	Pro	Asp	Gly	Leu	
			20					25					30			
atg	atc	cct	gag	gac	ggg	gct	aac	gat	gaa	gaa	ctg	gag	gct	gag	ttc	385
Met	Ile	Pro	Glu	Asp	Gly	Ala	Asn	Asp	Glu	Glu	Leu	Glu	Ala	Glu	Phe	
		35					40					45				
ttg	gct	ttg	gtc	ggg	ggc	cag	ccc	cca	gcc	ctg	gag	aag	ctc	aaa	ggc	433
Leu	Ala	Leu	Val	Gly	Gly	Gln	Pro	Pro	Ala	Leu	Glu	Lys	Leu	Lys	Gly	
	50					55					60					
aaa	ggt	ccc	ttg	ccg	atg	gag	gcc	att	gag	aag	atg	gcc	agc	ctg	tgc	481
Lys	Gly	Pro	Leu	Pro	Met	Glu	Ala	Ile	Glu	Lys	Met	Ala	Ser	Leu	Cys	
	65				70				75						80	
atg	aga	gac	ccg	gat	gag	gat	gag	gag	gag	ggg	acg	gat	gag	gac	gac	529
Met	Arg	Asp	Pro	Asp	Glu	Asp	Glu	Glu	Glu	Gly	Thr	Asp	Glu	Asp	Asp	
			85						90					95		
ttg	gag	gct	gat	gat	gac	ctg	ctg	gcg	gag	cta	aat	gag	gtc	ctt	gga	577
Leu	Glu	Ala	Asp	Asp	Asp	Leu	Leu	Ala	Glu	Leu	Asn	Glu	Val	Leu	Gly	
			100					105					110			
gag	gag	cag	aag	gct	tca	gag	acc	cca	cct	cct	gtg	gcc	cag	ccg	aag	625
Glu	Glu	Gln	Lys	Ala	Ser	Glu	Thr	Pro	Pro	Pro	Val	Ala	Gln	Pro	Lys	
		115					120					125				
cct	gag	gcc	cct	cat	ccg	ggg	ctg	gag	acc	acc	ttg	cag	gag	agg	ctg	673
Pro	Glu	Ala	Pro	His	Pro	Gly	Leu	Glu	Thr	Thr	Leu	Gln	Glu	Arg	Leu	
		130				135					140					
gcg	ctc	tat	cag	aca	gca	att	gaa	agc	gcc	aga	caa	gct	gga	gac	agc	721
Ala	Leu	Tyr	Gln	Thr	Ala	Ile	Glu	Ser	Ala	Arg	Gln	Ala	Gly	Asp	Ser	
	145				150				155						160	
gcc	aag	atg	cgg	cgc	tac	gat	cgg	ggg	ctt	aaa	aca	ctg	gaa	aac	ctg	769
Ala	Lys	Met	Arg	Arg	Tyr	Asp	Arg	Gly	Leu	Lys	Thr	Leu	Glu	Asn	Leu	
			165					170						175		
ctc	gcc	tcc	atc	cgt	aag	ggc	aat	gcc	att	gac	gaa	gcg	gac	atc	ccg	817
Leu	Ala	Ser	Ile	Arg	Lys	Gly	Asn	Ala	Ile	Asp	Glu	Ala	Asp	Ile	Pro	
			180				185						190			
ccg	cca	gtg	gcc	ata	gga	aaa	ggc	ccg	gcg	tcc	acg	cct	acc	tac	agc	865
Pro	Pro	Val	Ala	Ile	Gly	Lys	Gly	Pro	Pro	Ala	Ser	Thr	Pro	Thr	Ser	
		195					200					205				
cct	gca	ccc	acc	cag	ccg	gcc	cct	aga	atc	gcg	tca	gcc	cca	gag	ccc	913
Pro	Ala	Pro	Thr	Gln	Pro	Ala	Pro	Arg	Ile	Ala	Ser	Ala	Pro	Glu	Pro	
	210					215					220					
agg	gtc	acc	ctg	gag	gga	cct	tct	gcc	acc	gcc	cca	gcc	tca	tct	cca	961
Arg	Val	Thr	Leu	Glu	Gly	Pro	Ser	Ala	Thr		Pro	Ala	Ser	Ser	Pro	
	225				230				235						240	
ggc	ttg	gct	aag	ccc	cag	atg	ccc	cca	ggt	ccc	tgc	agc	cct	ggc	cct	1009
Gly	Leu	Ala	Lys	Pro	Gln	Met	Pro	Pro	Gly	Pro	Cys	Ser	Pro	Gly	Pro	



245										250					255					
ctg gcc cag ttg cag agc cgc cag cgc gac tac aag ctg gct gcc ctc	1057																			
Leu Ala Gln Leu Gln Ser Arg Gln Arg Asp Tyr Lys Leu Ala Ala Leu																				
260 265 270																				
cac gcc aag cag cag gga gat acc act gct gcc gct aga cac ttc cgc	1105																			
His Ala Lys Gln Gln Gly Asp Thr Thr Ala Ala Ala Arg His Phe Arg																				
275 280 285																				
gtg gct aag agc ttt gat gct gtc ttg gag gcc ctg agc cgg ggt gag	1153																			
Val Ala Lys Ser Phe Asp Ala Val Leu Glu Ala Leu Ser Arg Gly Glu																				
290 295 300																				
ccc gtg gac ctc tcc tgc ctg ccc cct cca ccc gac cag ctg ccc cca	1201																			
Pro Val Asp Leu Ser Cys Leu Pro Pro Pro Pro Asp Gln Leu Pro Pro																				
305 310 315 320																				
gac cca ccg tca cca ccg tgc cag cct ccg acc ccc gct acg gcg ccc	1249																			
Asp Pro Pro Ser Pro Pro Ser Gln Pro Pro Thr Pro Ala Thr Ala Pro																				
325 330 335																				
tcc aca aca gag gtg ccc cca ccc ccg agg acc ctg ctg gag gcg ctg	1297																			
Ser Thr Thr Glu Val Pro Pro Pro Arg Thr Leu Leu Glu Ala Leu																				
340 345 350																				
gag cag cgg atg gag cgg tac cag gtg gcc gca gcc cag gcc aag agc	1345																			
Glu Gln Arg Met Glu Arg Tyr Gln Val Ala Ala Ala Gln Ala Lys Ser																				
355 360 365																				
aag ggg gac cag cgg aaa gct cga atg cac gag cgc atc gtc aag caa	1393																			
Lys Gly Asp Gln Arg Lys Ala Arg Met His Glu Arg Ile Val Lys Gln																				
370 375 380																				
tac caa gat gcc atc cga gcc cac aag gct ggc cga gcc gtg gat gtc	1441																			
Tyr Gln Asp Ala Ile Arg Ala His Lys Ala Gly Arg Ala Val Asp Val																				
385 390 395 400																				
gct gaa ttg ccc gtg ccc cca ggc ttc ccc cca atc cag ggc ctg gag	1489																			
Ala Glu Leu Pro Val Pro Pro Gly Phe Pro Pro Ile Gln Gly Leu Glu																				
405 410 415																				
gcc acc aag ccc acc cag cag agt ctg gtg ggt gtc ctg gag act gcc	1537																			
Ala Thr Lys Pro Thr Gln Gln Ser Leu Val Gly Val Leu Glu Thr Ala																				
420 425 430																				
atg aag ctg gcc aac cag gat gaa ggc cca gag gat gaa gag gat gag	1585																			
Met Lys Leu Ala Asn Gln Asp Glu Gly Pro Glu Asp Glu Glu Asp Glu																				
435 440 445																				
gtg cct aag aag cag aac agc cct gtg gcc ccc aca gcc cag ccc aaa	1633																			
Val Pro Lys Lys Gln Asn Ser Pro Val Ala Pro Thr Ala Gln Pro Lys																				
450 455 460																				
gcc cca ccc tca aga act ccc cag tgc gga tca gcc cca aca gcc aaa	1681																			
Ala Pro Pro Ser Arg Thr Pro Gln Ser Gly Ser Ala Pro Thr Ala Lys																				
465 470 475 480																				

gcg ccc ccc aaa gcc aca tcc acc aga gcc cag cag cag ctg gcc ttc	1729
Ala Pro Pro Lys Ala Thr Ser Thr Arg Ala Gln Gln Gln Leu Ala Phe	
485 490 495	
cta gag ggc cgc aag aag cag ctc ctg cag gcc gca ctg cga gcc aag	1777
Leu Glu Gly Arg Lys Lys Gln Leu Leu Gln Ala Ala Leu Arg Ala Lys	
500 505 510	
cag aaa aac gac gtg gag ggt gcc aag atg cac ctg cgc caa gcc aag	1825
Gln Lys Asn Asp Val Glu Gly Ala Lys Met His Leu Arg Gln Ala Lys	
515 520 525	
gga ctg gag cct atg ctg gag gcc tcg cgc aat ggg ctg cct gtg gac	1873
Gly Leu Glu Pro Met Leu Glu Ala Ser Arg Asn Gly Leu Pro Val Asp	
530 535 540	
atc acc aag gtg ccg cct gcc cct gtc aac aag gac gac ttt gcc ctg	1921
Ile Thr Lys Val Pro Pro Ala Pro Val Asn Lys Asp Asp Phe Ala Leu	
545 550 555 560	
gtc cag cgg cct ggc ccg ggt ctg tct cag gag gcc gcc cgg cgc tat	1969
Val Gln Arg Pro Gly Pro Gly Leu Ser Gln Glu Ala Ala Arg Arg Tyr	
565 570 575	
ggt gaa ctc acc aag ctc ata cgg cag cag cac gag atg tgc ctg aac	2017
Gly Glu Leu Thr Lys Leu Ile Arg Gln Gln His Glu Met Cys Leu Asn	
580 585 590	
cac tca aac caa ttc acc cag ctg ggc aac atc act gaa acc acc aag	2065
His Ser Asn Gln Phe Thr Gln Leu Gly Asn Ile Thr Glu Thr Thr Lys	
595 600 605	
ttt gaa aag ttg gcg gag gac tgt aag cgg agc atg gac att ctg aag	2113
Phe Glu Lys Leu Ala Glu Asp Cys Lys Arg Ser Met Asp Ile Leu Lys	
610 615 620	
caa gcc ttc gtc cgg ggt ctc ccc acg ccc acc gcc cgc ttt gag caa	2161
Gln Ala Phe Val Arg Gly Leu Pro Thr Pro Thr Ala Arg Phe Glu Gln	
625 630 635 640	
agg acc ttc agc gtc atc aag atc ttc cct gac ctc agc agc aac gac	2209
Arg Thr Phe Ser Val Ile Lys Ile Phe Pro Asp Leu Ser Ser Asn Asp	
645 650 655	
atg ctc ctc ttc atc gtg aag ggc atc aac ttg ccc aca ccc cca gga	2257
Met Leu Leu Phe Ile Val Lys Gly Ile Asn Leu Pro Thr Pro Pro Gly	
660 665 670	
ctg tcc cct ggc gat ctg gat gtc ttt gtt cgg ttt gac ttc ccc tat	2305
Leu Ser Pro Gly Asp Leu Asp Val Phe Val Arg Phe Asp Phe Pro Tyr	
675 680 685	
ccc aac gtg gaa gaa gct cag aaa gac aag acc agt gtg atc aag aac	2353
Pro Asn Val Glu Glu Ala Gln Lys Asp Lys Thr Ser Val Ile Lys Asn	
690 695 700	

aca gac tcc cct gag ttc aag gag cag ttc aaa ctc tgc atc aac cgc	2401
Thr Asp Ser Pro Glu Phe Lys Glu Gln Phe Lys Leu Cys Ile Asn Arg	
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agc cac cgt ggc ttc cga agg gcc atc cag acc aag ggc atc aag ttc	2449
Ser His Arg Gly Phe Arg Arg Ala Ile Gln Thr Lys Gly Ile Lys Phe	
725 730 735	
gaa gtg gtt cac aag ggg ggg ctg ttc aag act gac cgg gtg ctg ggg	2497
Glu Val Val His Lys Gly Gly Leu Phe Lys Thr Asp Arg Val Leu Gly	
740 745 750	
aca gcc cag ctg aag ctg gat gca ctg gag ata gca tgt gag gtc cgg	2545
Thr Ala Gln Leu Lys Leu Asp Ala Leu Glu Ile Ala Cys Glu Val Arg	
755 760 765	
gag atc ctt gag gtc ctg gat ggt cgc cgg ccc aca ggg ggg cga ctg	2593
Glu Ile Leu Glu Val Leu Asp Gly Arg Arg Pro Thr Gly Gly Arg Leu	
770 775 780	
gag gta atg gtc cgg att cgg gag cca ctg aca gcc cag cag ttg gag	2641
Glu Val Met Val Arg Ile Arg Glu Pro Leu Thr Ala Gln Gln Leu Glu	
785 790 795 800	
acg acg aca gag agg tgg ctg gtc att gac cct gtg ccg gca gct gtg	2689
Thr Thr Thr Glu Arg Trp Leu Val Ile Asp Pro Val Pro Ala Ala Val	
805 810 815	
ccc aca cag gtt gct ggg ccc aaa ggg aag gcc cct cct gtg cct gcc	2737
Pro Thr Gln Val Ala Gly Pro Lys Gly Lys Ala Pro Pro Val Pro Ala	
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cct gca agg gag tca ggg aac aga tca gcc cgg ccc ctg cat agc ctc	2785
Pro Ala Arg Glu Ser Gly Asn Arg Ser Ala Arg Pro Leu His Ser Leu	
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agt gtg ctg gcg ttt gac caa gag cgt ctg gag cgg aag atc ctg gcc	2833
Ser Val Leu Ala Phe Asp Gln Glu Arg Leu Glu Arg Lys Ile Leu Ala	
850 855 860	
ctc agg cag gcg cgg cgg ccg gtg ccc cca gaa gtg gcc cag cag tac	2881
Leu Arg Gln Ala Arg Arg Pro Val Pro Pro Glu Val Ala Gln Gln Tyr	
865 870 875 880	
cag gac atc atg caa cgc agc cag tgg cag agg gca cag ctg gag cag	2929
Gln Asp Ile Met Gln Arg Ser Gln Trp Gln Arg Ala Gln Leu Glu Gln	
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ggg ggt gtg ggc atc cga cgg gaa tac aca gcc cag ctg gag cgg cag	2977
Gly Gly Val Gly Ile Arg Arg Glu Tyr Thr Ala Gln Leu Glu Arg Gln	
900 905 910	
ctg cag ttc tac acg gag gct gcc cgg cgc ctg ggc aac gat ggc agc	3025
Leu Gln Phe Tyr Thr Glu Ala Ala Arg Arg Leu Gly Asn Asp Gly Ser	
915 920 925	
agg gat gct gca aag gag gcg ctc tat agg cgg aat ctg gta ggg agt	3073

Arg Asp Ala Ala Lys Glu Ala Leu Tyr Arg Arg Asn Leu Val Gly Ser  
930 935 940

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Glu Leu Gln Arg Leu Arg Arg  
945 950

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<211> 951

<212> PRT

<213> Homo sapiens

<400> 172

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Met Ile Pro Glu Asp Gly Ala Asn Asp Glu Glu Leu Glu Ala Glu Phe  
35 40 45

Leu Ala Leu Val Gly Gly Gln Pro Pro Ala Leu Glu Lys Leu Lys Gly  
50 55 60

Lys Gly Pro Leu Pro Met Glu Ala Ile Glu Lys Met Ala Ser Leu Cys  
65 70 75 80

Met Arg Asp Pro Asp Glu Asp Glu Glu Gly Thr Asp Glu Asp Asp  
85 90 95

Leu Glu Ala Asp Asp Asp Leu Leu Ala Glu Leu Asn Glu Val Leu Gly  
100 105 110

Glu Glu Gln Lys Ala Ser Glu Thr Pro Pro Pro Val Ala Gln Pro Lys  
115 120 125

Pro Glu Ala Pro His Pro Gly Leu Glu Thr Thr Leu Gln Glu Arg Leu  
130 135 140

Ala	Leu	Tyr	Gln	Thr	Ala	Ile	Glu	Ser	Ala	Arg	Gln	Ala	Gly	Asp	Ser	145	150	155	160
Ala	Lys	Met	Arg	Arg	Tyr	Asp	Arg	Gly	Leu	Lys	Thr	Leu	Glu	Asn	Leu	165	170	175	
Leu	Ala	Ser	Ile	Arg	Lys	Gly	Asn	Ala	Ile	Asp	Glu	Ala	Asp	Ile	Pro	180	185	190	
Pro	Pro	Val	Ala	Ile	Gly	Lys	Gly	Pro	Ala	Ser	Thr	Pro	Thr	Tyr	Ser	195	200	205	
Pro	Ala	Pro	Thr	Gln	Pro	Ala	Pro	Arg	Ile	Ala	Ser	Ala	Pro	Glu	Pro	210	215	220	
Arg	Val	Thr	Leu	Glu	Gly	Pro	Ser	Ala	Thr	Ala	Pro	Ala	Ser	Ser	Pro	225	230	235	240
Gly	Leu	Ala	Lys	Pro	Gln	Met	Pro	Pro	Gly	Pro	Cys	Ser	Pro	Gly	Pro	245	250	255	
Leu	Ala	Gln	Leu	Gln	Ser	Arg	Gln	Arg	Asp	Tyr	Lys	Leu	Ala	Ala	Leu	260	265	270	
His	Ala	Lys	Gln	Gln	Gly	Asp	Thr	Thr	Ala	Ala	Ala	Arg	His	Phe	Arg	275	280	285	
Val	Ala	Lys	Ser	Phe	Asp	Ala	Val	Leu	Glu	Ala	Leu	Ser	Arg	Gly	Glu	290	295	300	
Pro	Val	Asp	Leu	Ser	Cys	Leu	Pro	Pro	Pro	Pro	Asp	Gln	Leu	Pro	Pro	305	310	315	320
Asp	Pro	Pro	Ser	Pro	Pro	Ser	Gln	Pro	Pro	Thr	Pro	Ala	Thr	Ala	Pro	325	330	335	
Ser	Thr	Thr	Glu	Val	Pro	Pro	Pro	Pro	Arg	Thr	Leu	Leu	Glu	Ala	Leu	340	345	350	
Glu	Gln	Arg	Met	Glu	Arg	Tyr	Gln	Val	Ala	Ala	Ala	Gln	Ala	Lys	Ser	355	360	365	
Lys	Gly	Asp	Gln	Arg	Lys	Ala	Arg	Met	His	Glu	Arg	Ile	Val	Lys	Gln	370	375	380	
Tyr	Gln	Asp	Ala	Ile	Arg	Ala	His	Lys	Ala	Gly	Arg	Ala	Val	Asp	Val	385	390	395	400
Ala	Glu	Leu	Pro	Val	Pro	Pro	Gly	Phe	Pro	Pro	Ile	Gln	Gly	Leu	Glu	405	410	415	
Ala	Thr	Lys	Pro	Thr	Gln	Gln	Ser	Leu	Val	Gly	Val	Leu	Glu	Thr	Ala	420	425	430	
Met	Lys	Leu	Ala	Asn	Gln	Asp	Glu	Gly	Pro	Glu	Asp	Glu	Glu	Asp	Glu	435	440	445	

Val Pro Lys Lys Gln Asn Ser Pro Val Ala Pro Thr Ala Gln Pro Lys  
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 Ala Pro Pro Ser Arg Thr Pro Gln Ser Gly Ser Ala Pro Thr Ala Lys  
 465 470 475 480  
 Ala Pro Pro Lys Ala Thr Ser Thr Arg Ala Gln Gln Gln Leu Ala Phe  
 485 490 495  
 Leu Glu Gly Arg Lys Lys Gln Leu Leu Gln Ala Ala Leu Arg Ala Lys  
 500 505 510  
 Gln Lys Asn Asp Val Glu Gly Ala Lys Met His Leu Arg Gln Ala Lys  
 515 520 525  
 Gly Leu Glu Pro Met Leu Glu Ala Ser Arg Asn Gly Leu Pro Val Asp  
 530 535 540  
 Ile Thr Lys Val Pro Pro Ala Pro Val Asn Lys Asp Asp Phe Ala Leu  
 545 550 555 560  
 Val Gln Arg Pro Gly Pro Gly Leu Ser Gln Glu Ala Ala Arg Arg Tyr  
 565 570 575  
 Gly Glu Leu Thr Lys Leu Ile Arg Gln Gln His Glu Met Cys Leu Asn  
 580 585 590  
 His Ser Asn Gln Phe Thr Gln Leu Gly Asn Ile Thr Glu Thr Thr Lys  
 595 600 605  
 Phe Glu Lys Leu Ala Glu Asp Cys Lys Arg Ser Met Asp Ile Leu Lys  
 610 615 620  
 Gln Ala Phe Val Arg Gly Leu Pro Thr Pro Thr Ala Arg Phe Glu Gln  
 625 630 635 640  
 Arg Thr Phe Ser Val Ile Lys Ile Phe Pro Asp Leu Ser Ser Asn Asp  
 645 650 655  
 Met Leu Leu Phe Ile Val Lys Gly Ile Asn Leu Pro Thr Pro Pro Gly  
 660 665 670  
 Leu Ser Pro Gly Asp Leu Asp Val Phe Val Arg Phe Asp Phe Pro Tyr  
 675 680 685  
 Pro Asn Val Glu Glu Ala Gln Lys Asp Lys Thr Ser Val Ile Lys Asn  
 690 695 700  
 Thr Asp Ser Pro Glu Phe Lys Glu Gln Phe Lys Leu Cys Ile Asn Arg  
 705 710 715 720  
 Ser His Arg Gly Phe Arg Arg Ala Ile Gln Thr Lys Gly Ile Lys Phe  
 725 730 735  
 Glu Val Val His Lys Gly Gly Leu Phe Lys Thr Asp Arg Val Leu Gly  
 740 745 750

Thr Ala Gln Leu Lys Leu Asp Ala Leu Glu Ile Ala Cys Glu Val Arg  
755 760 765

Glu Ile Leu Glu Val Leu Asp Gly Arg Arg Pro Thr Gly Gly Arg Leu  
770 775 780

Glu Val Met Val Arg Ile Arg Glu Pro Leu Thr Ala Gln Gln Leu Glu  
785 790 795 800

Thr Thr Thr Glu Arg Trp Leu Val Ile Asp Pro Val Pro Ala Ala Val  
805 810 815

Pro Thr Gln Val Ala Gly Pro Lys Gly Lys Ala Pro Pro Val Pro Ala  
820 825 830

Pro Ala Arg Glu Ser Gly Asn Arg Ser Ala Arg Pro Leu His Ser Leu  
835 840 845

Ser Val Leu Ala Phe Asp Gln Glu Arg Leu Glu Arg Lys Ile Leu Ala  
850 855 860

Leu Arg Gln Ala Arg Arg Pro Val Pro Pro Glu Val Ala Gln Gln Tyr  
865 870 875 880

Gln Asp Ile Met Gln Arg Ser Gln Trp Gln Arg Ala Gln Leu Glu Gln  
885 890 895

Gly Gly Val Gly Ile Arg Arg Glu Tyr Thr Ala Gln Leu Glu Arg Gln  
900 905 910

Leu Gln Phe Tyr Thr Glu Ala Ala Arg Arg Leu Gly Asn Asp Gly Ser  
915 920 925

Arg Asp Ala Ala Lys Glu Ala Leu Tyr Arg Arg Asn Leu Val Gly Ser  
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Glu Leu Gln Arg Leu Arg Arg  
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<212> DNA  
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<222> (574)..(1683)

<400> 173  
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gac ttc caa ttc caa gat tta aat tca agt ctc aga ccc agg ttg gga 642
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aat gca act gcc aat aat act tgc att gtt gat gat tcc ttc aag tat 690
Asn Ala Thr Ala Asn Asn Thr Cys Ile Val Asp Asp Ser Phe Lys Tyr
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aat ttg aat ggt gct gtc tat agt gtt gta ttc atc ctg ggt cta ata 738
Asn Leu Asn Gly Ala Val Tyr Ser Val Val Phe Ile Leu Gly Leu Ile
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acc aac agt gcc tcc ctg ttt gtc ttc tgc ttc cgc atg aaa atg aga 786
Thr Asn Ser Ala Ser Leu Phe Val Phe Cys Phe Arg Met Lys Met Arg
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agt gag acg gct act ttc atc acc aac ctg gcc ctc tct gat ttg ctt 834
Ser Glu Thr Ala Thr Phe Ile Thr Asn Leu Ala Leu Ser Asp Leu Leu
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ttt gtt tgt acc cta cct ttc aaa ata ttt tac aac ttt aat cgc cac 882
Phe Val Cys Thr Leu Pro Phe Lys Ile Phe Tyr Asn Phe Asn Arg His
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tgg cct ttt ggt gac acc ctc tgt aag atc tca ggg act gcg ttc ctc 930
Trp Pro Phe Gly Asp Thr Leu Cys Lys Ile Ser Gly Thr Ala Phe Leu
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acc aac atc tat ggg agc atg ctc ttc ctc acc tgc atc agt gtg gat 978
Thr Asn Ile Tyr Gly Ser Met Leu Phe Leu Thr Cys Ile Ser Val Asp
      120                               125                               130                               135

cgt ttc cta gcc att gtc tat ccc ttc cga tgc cgt acc atc agg acc 1026
Arg Phe Leu Ala Ile Val Tyr Pro Phe Arg Ser Arg Thr Ile Arg Thr
      140                               145                               150

agg agg aat tcc gcc att gtg tgc gct gga gtc tgg atc cta gtc ctc 1074
Arg Arg Asn Ser Ala Ile Val Cys Ala Gly Val Trp Ile Leu Val Leu
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agt ggt ggt att tca gct tct ttg ttc tcc acc act aat gtc aac aat 1122

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Ser	Gly	Gly	Ile	Ser	Ala	Ser	Leu	Phe	Ser	Thr	Thr	Asn	Val	Asn	Asn		
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Ala	Thr	Thr	Thr	Cys	Phe	Glu	Gly	Phe	Ser	Lys	Arg	Val	Trp	Lys	Thr		
	185					190					195						
tac	ctg	tcc	aag	atc	act	ata	ttc	att	gaa	gtt	gtt	gga	ttc	atc	att	1218	
Tyr	Leu	Ser	Lys	Ile	Thr	Ile	Phe	Ile	Glu	Val	Val	Gly	Phe	Ile	Ile		
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cct	ctg	ata	ttg	aat	gtt	tct	tgt	tct	tct	gtg	gtg	ctt	aga	acc	ctc	1266	
Pro	Leu	Ile	Leu	Asn	Val	Ser	Cys	Ser	Ser	Val	Val	Leu	Arg	Thr	Leu		
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Arg	Lys	Pro	Ala	Thr	Leu	Ser	Gln	Ile	Gly	Thr	Asn	Lys	Lys	Lys	Val		
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Leu	Lys	Met	Ile	Thr	Val	His	Met	Ala	Val	Phe	Val	Val	Cys	Phe	Val		
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cca	tac	aac	tcc	gtt	ctc	ttt	tta	tat	gcc	ttg	gta	cgc	tcc	caa	gcc	1410	
Pro	Tyr	Asn	Ser	Val	Leu	Phe	Leu	Tyr	Ala	Leu	Val	Arg	Ser	Gln	Ala		
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Thr	Leu	Cys	Leu	Ala	Thr	Leu	Asn	Cys	Cys	Phe	Asp	Pro	Phe	Ile	Tyr		
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tac	ttc	act	ctt	gaa	tcc	ttt	cag	aag	tcc	ttt	tat	atc	aat	aca	cat	1554	
Tyr	Phe	Thr	Leu	Glu	Ser	Phe	Gln	Lys	Ser	Phe	Tyr	Ile	Asn	Thr	His		
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ata	agg	atg	gag	tgc	ctg	ttt	aag	act	gag	aca	cct	ctg	acc	ccc	aaa	1602	
Ile	Arg	Met	Glu	Ser	Leu	Phe	Lys	Thr	Glu	Thr	Pro	Leu	Thr	Pro	Lys		
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cct	tcc	ctt	cca	gct	atc	caa	gag	gaa	gtt	agt	gat	caa	aca	aca	aat	1650	
Pro	Ser	Leu	Pro	Ala	Ile	Gln	Glu	Glu	Val	Ser	Asp	Gln	Thr	Thr	Asn		
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Asn	Gly	Gly	Glu	Leu	Met	Leu	Glu	Ser	Thr	Phe							
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 Val Asp Asp Ser Phe Lys Tyr Asn Leu Asn Gly Ala Val Tyr Ser Val  
 35 40 45  
 Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Ala Ser Leu Phe Val Phe  
 50 55 60  
 Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Thr Phe Ile Thr Asn  
 65 70 75 80  
 Leu Ala Leu Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe Lys Ile  
 85 90 95

Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu Cys Lys  
 100 105 110  
 Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met Leu Phe  
 115 120 125  
 Leu Thr Cys Ile Ser Val Asp Arg Phe Leu Ala Ile Val Tyr Pro Phe  
 130 135 140  
 Arg Ser Arg Thr Ile Arg Thr Arg Arg Asn Ser Ala Ile Val Cys Ala  
 145 150 155 160  
 Gly Val Trp Ile Leu Val Leu Ser Gly Gly Ile Ser Ala Ser Leu Phe  
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 Ser Thr Thr Asn Val Asn Asn Ala Thr Thr Thr Cys Phe Glu Gly Phe  
 180 185 190  
 Ser Lys Arg Val Trp Lys Thr Tyr Leu Ser Lys Ile Thr Ile Phe Ile  
 195 200 205  
 Glu Val Val Gly Phe Ile Ile Pro Leu Ile Leu Asn Val Ser Cys Ser  
 210 215 220  
 Ser Val Val Leu Arg Thr Leu Arg Lys Pro Ala Thr Leu Ser Gln Ile  
 225 230 235 240  
 Gly Thr Asn Lys Lys Lys Val Leu Lys Met Ile Thr Val His Met Ala  
 245 250 255  
 Val Phe Val Val Cys Phe Val Pro Tyr Asn Ser Val Leu Phe Leu Tyr  
 260 265 270  
 Ala Leu Val Arg Ser Gln Ala Ile Thr Asn Cys Leu Leu Glu Arg Phe  
 275 280 285  
 Ala Lys Ile Met Tyr Pro Ile Thr Leu Cys Leu Ala Thr Leu Asn Cys  
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 Cys Phe Asp Pro Phe Ile Tyr Tyr Phe Thr Leu Glu Ser Phe Gln Lys  
 305 310 315 320  
 Ser Phe Tyr Ile Asn Thr His Ile Arg Met Glu Ser Leu Phe Lys Thr  
 325 330 335  
 Glu Thr Pro Leu Thr Pro Lys Pro Ser Leu Pro Ala Ile Gln Glu Glu  
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 Thr Phe  
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 <222> (67)..(1176)

<400> 175

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      Met Gly Asp Arg Arg Phe Ile Asp Phe Gln Phe Gln Asp Ser
        1              5              10

aat tca agc ctc aga ccc agg ttg ggc aat gct act gcc aat aat act      156
Asn Ser Ser Leu Arg Pro Arg Leu Gly Asn Ala Thr Ala Asn Asn Thr
   15              20              25              30

tgc att gtt gat gat tcc ttc aag tat aat ctc aat ggt gct gtc tac      204
Cys Ile Val Asp Asp Ser Phe Lys Tyr Asn Leu Asn Gly Ala Val Tyr
              35              40              45

agt gtt gta ttc atc ttg ggt ctg ata acc aac agt gtc tct ctg ttt      252
Ser Val Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Val Ser Leu Phe
              50              55              60

gtc ttc tgt ttc cgc atg aaa atg aga agt gag act gct att ttt atc      300
Val Phe Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Ile Phe Ile
              65              70              75

acc aat cta gct gtc tct gat ttg ctt ttt gtc tgt aca cta cct ttt      348
Thr Asn Leu Ala Val Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe
              80              85              90

aaa ata ttt tac aac ttc aac cgc cac tgg cct ttt ggt gac acc ctc      396
Lys Ile Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu
   95              100              105              110

tgc aag atc tct gga act gca ttc ctt acc aac atc tat ggg agc atg      444
Cys Lys Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met
              115              120              125

ctc ttt ctc acc tgt att agt gtg gat cgt ttc ctg gcc att gtc tat      492
Leu Phe Leu Thr Cys Ile Ser Val Asp Arg Phe Leu Ala Ile Val Tyr
              130              135              140

cct ttt cga tct cgt act att agg act agg agg aat tct gcc att gtg      540
Pro Phe Arg Ser Arg Thr Ile Arg Thr Arg Arg Asn Ser Ala Ile Val
              145              150              155

tgt gct ggt gtc tgg atc cta gtc ctc agt ggc ggt att tca gcc tct      588
Cys Ala Gly Val Trp Ile Leu Val Leu Ser Gly Gly Ile Ser Ala Ser
              160              165              170

ttg ttt tcc acc act aat gtc aac aat gca acc acc acc tgc ttt gaa      636
Leu Phe Ser Thr Thr Asn Val Asn Asn Ala Thr Thr Thr Cys Phe Glu
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175	180	185	190	
ggc ttc tcc aaa cgt gtc tgg aag act tat tta tcc aag atc aca ata				684
Gly Phe Ser Lys Arg Val Trp Lys Thr Tyr Leu Ser Lys Ile Thr Ile	195	200	205	
ttt att gaa gtt gtt ggg ttt atc att cct cta ata ttg aat gtc tct				732
Phe Ile Glu Val Val Gly Phe Ile Ile Pro Leu Ile Leu Asn Val Ser	210	215	220	
tgc tct tct gtg gtg ctg aga act ctt cgc aag cct gct act ctg tct				780
Cys Ser Ser Val Val Leu Arg Thr Leu Arg Lys Pro Ala Thr Leu Ser	225	230	235	
caa att ggg acc aat aag aaa aaa gta ctg aaa atg atc aca gta cat				828
Gln Ile Gly Thr Asn Lys Lys Lys Val Leu Lys Met Ile Thr Val His	240	245	250	
atg gca gtc ttt gtg gta tgc ttt gta ccc tac aac tct gtc ctc ttc				876
Met Ala Val Phe Val Val Cys Phe Val Pro Tyr Asn Ser Val Leu Phe	255	260	265	270
ttg tat gcc ctg gtg cgc tcc caa gct att act aat tgc ttt ttg gaa				924
Leu Tyr Ala Leu Val Arg Ser Gln Ala Ile Thr Asn Cys Phe Leu Glu	275	280	285	
aga ttt gca aag atc atg tac cca atc acc ttg tgc ctt gca act ctg				972
Arg Phe Ala Lys Ile Met Tyr Pro Ile Thr Leu Cys Leu Ala Thr Leu	290	295	300	
aac tgt tgt ttt gac cct ttc atc tat tac ttc acc ctt gaa tcc ttt				1020
Asn Cys Cys Phe Asp Pro Phe Ile Tyr Tyr Phe Thr Leu Glu Ser Phe	305	310	315	
cag aag tcc ttc tac atc aat gcc cac atc aga atg gag tcc ctg ttt				1068
Gln Lys Ser Phe Tyr Ile Asn Ala His Ile Arg Met Glu Ser Leu Phe	320	325	330	
aag act gaa aca cct ttg acc aca aag cct tcc ctt cca gct att caa				1116
Lys Thr Glu Thr Pro Leu Thr Thr Lys Pro Ser Leu Pro Ala Ile Gln	335	340	345	350
gag gaa gtg agt gat caa aca aca aat aat ggt ggt gaa tta atg cta				1164
Glu Glu Val Ser Asp Gln Thr Thr Asn Asn Gly Gly Glu Leu Met Leu	355	360	365	
gaa tcc acc ttt taggtatgag aaatgtgttc aggtccagat atggtttctc				1216
Glu Ser Thr Phe	370			
ctataatttt tcctatgcta taaactaaag atttgaagct aatgatactg agaataatgc				1276
accaaattcca gtcagatata tttgtttgaa ggtatactgt agagttttta ttgctgtttt				1336
gttcagtaat tatagggtcaa atctaattac aacaaccaag atggattgcc aaactcttct				1396
gcttggttgg aatttcattg tatcgcatata tccaggtggc tagtggcatt tgataatata				1456

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 Val Asp Asp Ser Phe Lys Tyr Asn Leu Asn Gly Ala Val Tyr Ser Val  
 35 40 45  
 Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Val Ser Leu Phe Val Phe  
 50 55 60  
 Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Ile Phe Ile Thr Asn  
 65 70 75 80  
 Leu Ala Val Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe Lys Ile  
 85 90 95  
 Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu Cys Lys

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Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met Leu Phe 115 120 125		
Leu Thr Cys Ile Ser Val Asp Arg Phe Leu Ala Ile Val Tyr Pro Phe 130 135 140		
Arg Ser Arg Thr Ile Arg Thr Arg Arg Asn Ser Ala Ile Val Cys Ala 145 150 155 160		
Gly Val Trp Ile Leu Val Leu Ser Gly Gly Ile Ser Ala Ser Leu Phe 165 170 175		
Ser Thr Thr Asn Val Asn Asn Ala Thr Thr Thr Cys Phe Glu Gly Phe 180 185 190		
Ser Lys Arg Val Trp Lys Thr Tyr Leu Ser Lys Ile Thr Ile Phe Ile 195 200 205		
Glu Val Val Gly Phe Ile Ile Pro Leu Ile Leu Asn Val Ser Cys Ser 210 215 220		
Ser Val Val Leu Arg Thr Leu Arg Lys Pro Ala Thr Leu Ser Gln Ile 225 230 235 240		
Gly Thr Asn Lys Lys Lys Val Leu Lys Met Ile Thr Val His Met Ala 245 250 255		
Val Phe Val Val Cys Phe Val Pro Tyr Asn Ser Val Leu Phe Leu Tyr 260 265 270		
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Ala Lys Ile Met Tyr Pro Ile Thr Leu Cys Leu Ala Thr Leu Asn Cys 290 295 300		
Cys Phe Asp Pro Phe Ile Tyr Tyr Phe Thr Leu Glu Ser Phe Gln Lys 305 310 315 320		
Ser Phe Tyr Ile Asn Ala His Ile Arg Met Glu Ser Leu Phe Lys Thr 325 330 335		
Glu Thr Pro Leu Thr Thr Lys Pro Ser Leu Pro Ala Ile Gln Glu Glu 340 345 350		
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Thr Phe 370		

&lt;210&gt; 177

&lt;211&gt; 973

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (30)..(416)

&lt;400&gt; 177

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Leu Leu Arg Leu Leu Val Leu Gly Leu Trp Leu Ala Leu Leu Arg Ser
   10                               15                               20

gtg gcc ggg gag caa gcg cca ggc acc gcc ccc tgc tcc cgc ggc agc  149
Val Ala Gly Glu Gln Ala Pro Gly Thr Ala Pro Cys Ser Arg Gly Ser
   25                               30                               35                               40

tcc tgg agc gcg gac ctg gac aag tgc atg gac tgc gcg tct tgc agg  197
Ser Trp Ser Ala Asp Leu Asp Lys Cys Met Asp Cys Ala Ser Cys Arg
                               45                               50                               55

gcg cga ccg cac agc gac ttc tgc ctg ggc tgc gct gca gca cct cct  245
Ala Arg Pro His Ser Asp Phe Cys Leu Gly Cys Ala Ala Ala Pro Pro
                               60                               65                               70

gcc ccc ttc cgg ctg ctt tgg ccc atc ctt ggg ggc gct ctg agc ctg  293
Ala Pro Phe Arg Leu Leu Trp Pro Ile Leu Gly Gly Ala Leu Ser Leu
                               75                               80                               85

acc ttc gtg ctg ggg ctg ctt tct ggc ttt ttg gtc tgg aga cga tgc  341
Thr Phe Val Leu Gly Leu Leu Ser Gly Phe Leu Val Trp Arg Arg Cys
   90                               95                               100

cgc agg aga gag aag ttc acc acc ccc ata gag gag acc ggc gga gag  389
Arg Arg Arg Glu Lys Phe Thr Thr Pro Ile Glu Glu Thr Gly Gly Glu
  105                               110                               115                               120

ggc tgc cca gct gtg gcg ctg atc cag tgacaatgtg cccctgccca  436
Gly Cys Pro Ala Val Ala Leu Ile Gln
                               125

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tccagaacag aaaggagacc tcacgctggc tcacacaaaa cagctgacac tgactaagga 676

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cacgggggtc accctggggg gttagggacc tatttttaac actagggggc tggcccacta 856

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<211> 129

<212> PRT

<213> Homo sapiens

<400> 178

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Thr Ala Pro Cys Ser Arg Gly Ser Ser Trp Ser Ala Asp Leu Asp Lys  
35 40 45

Cys Met Asp Cys Ala Ser Cys Arg Ala Arg Pro His Ser Asp Phe Cys  
50 55 60

Leu Gly Cys Ala Ala Ala Pro Pro Ala Pro Phe Arg Leu Leu Trp Pro  
65 70 75 80

Ile Leu Gly Gly Ala Leu Ser Leu Thr Phe Val Leu Gly Leu Leu Ser  
85 90 95

Gly Phe Leu Val Trp Arg Arg Cys Arg Arg Arg Glu Lys Phe Thr Thr  
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Pro Ile Glu Glu Thr Gly Gly Glu Gly Cys Pro Ala Val Ala Leu Ile  
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Gln

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<212> DNA

<213> Homo Sapiens

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<212> PRT

<213> Homo Sapiens

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